

Bulab 9373



Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name Bulab 9373
Physical state Liquid.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Industry: Water treatment
Product use: Cooling water treatment

Uses advised against

None.

1.3 Details of the supplier of the safety data sheet

n.v. Buckman Laboratories
Wondelgemkaai 157
9000 Gent - **BELGIUM**
0032 (0)9 257 92 11

Distributor **Buckman Laboratories Ltd.**
Lancashire Gate - 21 Tiviot Dale
Stockport - Cheshire SK1 1TD - **UK**
0032 (0)9 257 92 11

**e-mail address of person
responsible for this SDS** sds@buckman.com

1.4 Emergency telephone number

Supplier

Telephone number 0032 (0)9 257 93 00
Hours of operation 24/7

Product name:

Bulab 9373

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

Classification according to UK CLP/GHS

Skin Corr. 1B, H314

Eye Dam. 1, H318

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Causes severe skin burns and eye damage.

Precautionary statements

Prevention

Wear protective gloves, protective clothing and eye or face protection.

Response

IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

Not applicable.

Disposal

Not applicable.

Supplemental label elements

Not applicable.

2.3 Other hazards

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Mixture

Product/ingredient name	Identifiers	%	Classification	Type
potassium hydroxide	REACH #: 01-2119487136-33 EC: 215-181-3 CAS: 1310-58-3 Index: 019-002-00-8	<5	Met. Corr. 1, H290 Acute Tox. 4, H302 Skin Corr. 1A, H314 Eye Dam. 1, H318 See Section 16 for the full text of the H statements declared above.	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

Product name:

Bulab 9373

SECTION 3: Composition/information on ingredients

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Inhalation	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact	Adverse symptoms may include the following: pain watering redness
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	Adverse symptoms may include the following: stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
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Product name:

Bulab 9373

SECTION 4: First aid measures

Specific treatments No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products Decomposition products may include the following materials:
metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Product name:

Bulab 9373

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations

Not available.

Industrial sector specific solutions

Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
potassium hydroxide	EH40/2005 WELs (United Kingdom (UK), 1/2020). STEL: 2 mg/m ³ 15 minutes.

Recommended monitoring procedures

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
potassium hydroxide; caustic potash	DNEL	Long term Inhalation	1 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	1 mg/m ³	General population [Consumers]	Local
	DNEL	Long term Inhalation	1 mg/m ³	General population	Local
	DNEL	Long term Inhalation	1 mg/m ³	Workers	Local

Product name:

Bulab 9373

SECTION 8: Exposure controls/personal protection

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: safety glasses with side-shields., face shield.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. 1 - 4 hours (breakthrough time): Recommended: Chemical-resistant gloves. (nitrile, neoprene, polyvinyl chloride (PVC), butyl rubber)

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear protective helmet with brim. Wear work clothing with long sleeves. Chemical-resistant protective suit.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear protective shoes.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state

Liquid. [Clear, yellow liquid]

Colour

Not available.

Odour

Not available.

Product name:

Bulab 9373

SECTION 9: Physical and chemical properties

Odour threshold	Not available.
Melting point/freezing point	-18°C
Initial boiling point and boiling range	Not available.
Flammability	Not available.
Lower and upper explosion limit	Not available.
Flash point	Closed cup: >100°C (>212°F)
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
pH	10.55
Viscosity	Dynamic: 0 to 20 mPa·s
Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not applicable.
Vapour pressure	Not available.
Relative density	Not available.
Density	1.27 to 1.29 g/cm ³ [25°C (77°F)]
Vapour density	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.
<u>Particle characteristics</u>	
Median particle size	Not applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	The product is stable.
10.3 Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	No specific data.
10.5 Incompatible materials	No specific data.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous combustion products : See Section 5.2 of the safety data sheet.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
potassium hydroxide	LD50 Oral	Rat	333 mg/kg Active ingredient: 50%	-

Product name:

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SECTION 11: Toxicological information

Conclusion/Summary Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
potassium hydroxide	Eyes - Moderate irritant	Rabbit	-	24 hours 1 mg	-
	Skin - Severe irritant	Guinea pig	-	24 hours 50 mg	-
	Skin - Severe irritant	Human	-	24 hours 50 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 50 mg	-

Conclusion/Summary Not available.

Sensitisation

Conclusion/Summary Not available.

Mutagenicity

Conclusion/Summary Not available.

Carcinogenicity

Conclusion/Summary Not available.

Reproductive toxicity

Conclusion/Summary Not available.

Teratogenicity

Conclusion/Summary Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

Not available.

Potential acute health effects

- Inhalation** Causes serious eye damage.
- Ingestion** May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system.
- Skin contact** Causes severe burns.
- Eye contact** May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** Adverse symptoms may include the following:
pain
watering
redness
- Ingestion** No specific data.
- Skin contact** Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Eye contact** Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Product name:

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SECTION 11: Toxicological information

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

Not available.

Conclusion/Summary Not available.

General No known significant effects or critical hazards.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Reproductive toxicity No known significant effects or critical hazards.

Other information Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
potassium hydroxide	Acute LC50 80 ppm Fresh water	-	96 hours

Conclusion/Summary Not available.

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Not available.			

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects Not known significant effects or critical hazards.

Product name:

Bulab 9373

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste

The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

This preparation is not classified as dangerous according to international transport regulations (ADR/RID, IMDG or ICAO/IATA).

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

None of the components are listed.

None of the components are listed.

Substances of very high concern

None of the components are listed.

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Product name:

Bulab 9373

SECTION 15: Regulatory information

15.2 Chemical safety assessment

This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate
 GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = GB CLP-specific Hazard statement
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 SGG = Segregation Group
 vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Classification	Justification
Skin Corr. 1B, H314 Eye Dam. 1, H318	Calculation method Calculation method

Full text of abbreviated H statements

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Full text of classifications

Acute Tox. 4	ACUTE TOXICITY - Category 4
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Met. Corr. 1	CORROSIVE TO METALS - Category 1
Skin Corr. 1A	SKIN CORROSION/IRRITATION - Category 1A
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B

Date of printing 1/2/2024

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Version 1.01

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Product name:

Bulab 9373

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REGULATORY FACT SHEET

Food Contact

FDA - US Food And Drug Administration. CFR - Code of Federal Regulations Title 21 (version June 2023):

This product is not FDA approved.

BfR Recommendations on Food Contact Materials (Version February 2023):

This product is not BfR approved.

Contact Details

For Regulatory content questions, please contact the Regulatory Affairs team on the e-mail address sds@buckman.com

For questions about the materials of construction, please contact the Field Equipment Team EMEA on the e-mail address FieldEquipmentDep_EMEA@buckman.com.

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Validated by	Regulatory Affairs Team and Field Equipment Team of Buckman EMEA.

This document can be considered as an official statement
This version supersedes any version issued before this date.

Notice to reader

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Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Revision Date: 12.11.2020

Previous date: 08.09.2020

Print Date:27.06.2022

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier****Commercial Product Name****Hydrogen peroxide 49,5%** Chemical name: Hydrogen peroxide**Registration number:**

01-2119485845-22

1.2 Relevant identified uses of the substance or mixture and uses advised against**Use of the Substance/Mixture**

Bleaching agent, Cleaning agent, Pulp and paper industry, detergent industry, chemical industry, textile industry, environmental protection.

Recommended restrictions on use

Do not use for other purposes than the identified uses.

1.3 Details of the supplier of the safety data sheet

Kemira Oyj
P.O. Box 33000101 HELSINKI FINLAND
Telephone+358108611, Telefax. +358108621124
ProductSafety.FI.Helsinki@kemira.com

1.4 Emergency telephone number

Carechem 24 International (Europe): +44 (0) 1235 239 670

SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****Classification according to Regulation (EU) 1272/2008(CLP)**

Acute toxicity; Category 4; Harmful if swallowed.

Acute toxicity; Category 4; Harmful if inhaled.

Skin irritation; Category 2; Causes skin irritation.

Specific target organ toxicity - single exposure; Category 3; May cause respiratory irritation.

Serious eye damage; Category 1; Causes serious eye damage.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)**

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Revision Date: 12.11.2020

Previous date: 08.09.2020

Print Date:27.06.2022

Hazard pictograms



Signal word

: Danger

Hazard statements

:	H302	Harmful if swallowed.
	H332	Harmful if inhaled.
	H315	Causes skin irritation.
	H318	Causes serious eye damage.
	H335	May cause respiratory irritation.

Precautionary statements

:	Prevention:	
	P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
	P280	Wear protective gloves/ eye protection/ face protection.
	P210	Keep away from open flames/ hot surfaces. - No smoking.
	P220	Keep/Store away from clothing/ Flammable/ combustible materials.
	Response:	
	P301 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
	P330	Rinse mouth.
	P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P370 + P378	In case of fire: Use water spray to extinguish.
	Storage:	
	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
	Disposal:	
	P501	Dispose of contents/container as special waste in compliance with local and national regulations.

Hazardous components which must be listed on the label:

- 7722-84-1 Hydrogen peroxide

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Revision Date: 12.11.2020

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2.3 Other hazards

Physical/Chemical Hazard; Risk of decomposition on heating. Risk of decomposition in contact with incompatible products. (metal oxides, metal ions (e.g. Mn, Fe, Cu, Ni, Cr, Zn), metal salts, bases, reducing agents). Sustains the combustion of combustible material.

Remarks; This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical nature : stabilized

Chemical name	CAS-No. EINECS-No. / ELINCS No.	Concentration [%]
Hydrogen peroxide	7722-84-1 231-765-0	< 50

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation

Move to fresh air. Keep warm. Oxygen or artificial respiration if needed. Call a physician immediately.

Skin contact

Wash off immediately with plenty of water removing all contaminated clothes and shoes. Wash contaminated clothing with plenty of water to prevent a fire hazard. Keep warm. If skin irritation persists, call a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult a physician.

Ingestion

Rinse mouth. Give small amounts of water to drink. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Keep warm. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Cough, Dizziness, Headache, Nausea, Shortness of breath, Redness, Pain, Blurred vision, Burn, Abdominal pain, Vomiting, Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Symptomatic treatment.

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Revision Date: 12.11.2020

Previous date: 08.09.2020

Print Date:27.06.2022

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**

Extinguishing media : Water
water mist
The product itself does not burn.

Unsuitable : Carbon dioxide (CO₂)
extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture

The product itself does not burn but it sustains the combustion of combustible material. Contact with combustible material may cause fire. Risk of explosion if mixed with combustible material. Pressure build-up in confined space (risk of decomposition).

5.3 Advice for firefighters

Self-contained breathing apparatus (EN 133)
Complete suit protecting against chemicals

Cool containers/tanks with water spray.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Avoid contact with skin, eyes and clothing. Never return spills in original containers for re-use. Ensure adequate ventilation. Wear personal protective equipment. Remove all sources of ignition. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Prevent product from entering drains. Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up

Prevent from spreading. Dam up. Contact the proper local authorities. Never return spills in original containers for re-use.

6.4 Reference to other sections

See Sections 7 and 8 for proper handling and protective measures and Section 13 for proper waste disposal measures.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling**

Never return unused material to storage receptacle. Open drum carefully as content may be under pressure. Avoid exposure. Ensure adequate ventilation, especially in confined areas. Wear suitable

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protective clothing. Keep away from sources of ignition - No smoking. Keep away from combustible material. Protect from contamination.

7.2 Conditions for safe storage, including any incompatibilities

Keep in a cool, well-ventilated place. Keep away from heat and sources of ignition. Condition of containers should be checked regularly. Store in original container. Store in a receptacle equipped with a vent.

Materials to avoid:

Combustible material, Reducing agents, Organic materials, Bases, metal oxides, metal ions (e.g. Mn, Fe, Cu, Ni, Cr, Zn), metal salts, Rust, Dirt

7.3 Specific end use(s)

Not applicable

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Hydrogen peroxide

GB EH40, 2005-04-06, TWA = 1 ppm = 1.4 mg/m³

GB EH40, 2005-04-06, STEL = 2 ppm = 2.8 mg/m³

DNEL

Hydrogen peroxide : End Use: Workers
Exposure routes: Inhalation
Value: 3 mg/m³
Acute, Local effects

End Use: Workers
Exposure routes: Inhalation
Value: 1.4 mg/m³
Long-term, Local effects

PNEC

Hydrogen peroxide : Fresh water
Value: 0.0126 mg/l

Fresh water sediment
Value: 0.047 mg/kg dry weight

Marine water

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Value: 0.0126 mg/l

Marine sediment

Value: 0.047 mg/kg dry weight

STP

Value: 4.66 mg/l

Soil

Value: 0.0023 mg/kg dry weight

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Avoid exposure. Wash hands before breaks and immediately after handling the product. Ensure adequate ventilation. Use personal protective equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.2 Individual protection measures, such as personal protective equipment

Hand protection

Glove material: butyl-rubber, Break through time: > 480 min, Glove thickness: 0.7 mm

Glove material: Natural Rubber, Break through time: > 480 min, Glove thickness: 1 mm

Glove material: Nitrile rubber, Break through time: > 480 min, Glove thickness: 0.33 mm

Protective gloves complying with EN 374. The information on suitable gloves is derived from literature, manufacture information or from data on the use of similar substances. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Due to the broad variety of gloves on the market it is recommended that the condition of use should be considered by following the directions given by the manufacturer.

Do not wear cotton gloves. Do not wear leather gloves. (May cause fire.)

Eye protection

Tightly fitting safety goggles and face-shield. (EN 166)

Skin and body protection

Chemical resistant protective clothing. Do not wear leather shoes. Safety shower.

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment. (filter ABEK-P3)

8.2.3 Environmental exposure controls

Prevent product from entering the environment.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

General Information (appearance, odour)

Physical state	liquid,
Colour	colourless
Odour	odourless, slightly pungent
Odour Threshold	not determined

Important health safety and environmental information

pH	1.5 - 4.0
Boiling point/boiling range	114 °C
Flash point	Not applicable
Evaporation rate	> 1 (n-butyl acetate = 1)
Flammability (solid, gas) :	Not applicable
Explosive properties:	
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	299 Pa (25 °C) 100 %
Relative vapour density	No data available
Density	1.195 g/cm ³
Solubility(ies):	
Water solubility	completely soluble
Fat solubility (solvent - oil to be specified)	Not applicable
Partition coefficient: n-octanol/water	log Pow: -1.57 (100 %)
Auto-ignition temperature	> 114 °C
Thermal decomposition	Stabilized.
Viscosity:	
Viscosity, dynamic	1.87 mPa.s (0 °C)1.17 mPa.s (20 °C)1.249 mPa.s (20 °C) (100 %)
Oxidizing	Not classified as oxidising.

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9.2 Other information

Surface tension

not determined

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Risk of decomposition in contact with incompatible products.
Risk of explosion due to rapid pressure increase in closed containers.

Decomposes to water and oxygen.
Contact with combustible material may cause fire.
Sustains the combustion of combustible material.

10.2 Chemical stability

Decomposes on heating.
Stabilising additive(s)

10.3 Possibility of hazardous reactions

Hazardous reactions : See chapter 10.1.
: Risk of decomposition on heating.
Risk of decomposition in contact with incompatible products.

10.4 Conditions to avoid

Conditions to avoid : High temperatures.
UV light.
Protect from contamination.
Keep away from heat and sources of ignition.

10.5 Incompatible materials

Materials to avoid : Combustible material
Reducing agents
Organic materials
Bases
metal oxides
metal ions (e.g. Mn, Fe, Cu, Ni, Cr, Zn)
metal salts
Rust
Dirt

10.6 Hazardous decomposition products

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Hazardous decomposition products : Oxygen
Water
Steam

Thermal decomposition : >114 °C
Note: Stabilized.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity**

Harmful if swallowed.

Ingestion causes burns of the stomach and upper digestive tract. Inhalation of aerosols may cause irritation of mucous membranes, inflammation and lung oedema.

Harmful if inhaled.

Hydrogen peroxide:

LD50/Oral/Rat/male and female: 1,193 - 1,270 mg/kg
Remarks:(35 % solution)

LD50/Dermal/Rabbit/male and female: > 2,000 mg/kg
Remarks: (35 % solution)

Irritation and corrosion

Skin: Causes skin irritation.

Eyes:
Causes serious eye damage.

Respiratory system:
May cause respiratory irritation.

Hydrogen peroxide:

Skin: Rabbit/4 h/OECD Test Guideline 404: No skin irritation
Remarks: (10 % solution)

Rabbit/4 h/OECD Test Guideline 404: irritating
Remarks: (35 % solution)

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Rabbit/4 h/OECD Test Guideline 404: Corrosive
Remarks: (70 % solution)

Eyes: Rabbit/OECD Test Guideline 405: Eye irritation
Remarks: >=5% w/w to < 8% w/w Causes serious eye irritation.

Rabbit/OECD Test Guideline 405: Severe eye irritation
Remarks: >= 8% w/w Causes serious eye damage.

Rabbit/OECD Test Guideline 405: Not irritating.
Remarks: (3 % solution)

Sensitisation

Hydrogen peroxide:
Guinea pig/Magnusson & Kligman test: Not sensitizing.
Remarks: (3 % solution)

Long term toxicity

Target organ

May cause respiratory irritation.

Hydrogen peroxide:

Repeated dose toxicity:

Oral/Mouse/male and female/90 d/OECD Test Guideline 408:

NOAEL: = 100 ppm

LOAEL: = 300 ppm

Remarks: In drinking water: (35 % solution)

Inhalation/Rat/male and female/28 d/OECD Test Guideline 412:

NOAEL: = 2,9 mg/m³

LOAEL: = 14,6 mg/m³

Remarks: (50 % solution)

Carcinogenicity

No known carcinogenic effects.

Based on available data, the classification criteria are not met.

Mutagenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

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Based on available data, the classification criteria are not met.

Teratogenicity

Based on available data, the classification criteria are not met.

Target organRemarks: (≥ 35 % solution)

STOT - single exposure May cause respiratory irritation.

STOT - single exposure

Inhalation

May cause respiratory irritation.

(≥ 35 % solution)**Human experience**

Inhalation

Irritating to respiratory system.

Skin contact

Contact with skin causes blanching and erythema.

Eye contact

Liquid causes severe inflammation of conjunctiva and may cause severe damage of the cornea.

Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity****Aquatic toxicity****Hydrogen peroxide:**

LC50/96 h/Pimephales promelas (fathead minnow)/semi-static test/US EPA TSCA Test Guidelines: 16.4 mg/l

Remarks: fresh water

EC50/48 h/Daphnia (water flea)/semi-static test/US EPA TSCA Test Guidelines: 2.4 mg/l

NOEC/72 h/Skeletonema costatum (diatom)/static test/Other guidelines: 0.63 mg/l

Remarks: (35 % solution)

Marine water

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Toxicity to other organisms**Hydrogen peroxide:**

EC50/30 min/activated sludge/Respiration inhibition of activated sludge/OECD Test Guideline 209: 466 mg/l

Remarks: (30 % solution)

EC50/3 h/activated sludge/Respiration inhibition of activated sludge/OECD Test Guideline 209: > 1,000 mg/l

Remarks: (30 % solution)

12.2 Persistence and degradability

Biological degradability:

Readily biodegradable

Biological degradability:**Hydrogen peroxide:**

Readily biodegradable

Chemical degradation:**Hydrogen peroxide:**

Decomposes to water and oxygen.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: log Pow: -1.57

Hydrogen peroxide:

Remarks: Not expected considering the low log Pow value.

Partition coefficient: n-octanol/water: log Pow: -1.57

12.4. Mobility in soil**Mobility**

Vapour pressure: 299 Pa (25 °C)

Water solubility: completely soluble

Surface tension: not determined

Hydrogen peroxide:

Vapour pressure:299 Pa (25 °C)

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Very soluble in water. Is likely to be mobile, adsorption to soil is low.

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

In accordance with local and national regulations. See also: Accidental release measures. Wear personal protective equipment. Can be incinerated, when in compliance with local regulations.

Rinse package before disposal. Empty containers that will be returned to the manufacturer must not be rinsed with water. Empty containers/packages must not be used for other purposes.

Must be disposed of as hazardous waste.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number 2014

Land transport

ADR:

Description of the goods:

14.2 UN proper shipping name HYDROGEN PEROXIDE, AQUEOUS SOLUTION

14.3 Transport hazard class(es) 5.1

14.4 Packing group: II

Classification code: OC1

Risk code 58

ADR/RID-Labels: 5.1, 8

Sea transport

IMDG:

Description of the goods:

14.2 UN proper shipping name UN2014, HYDROGEN PEROXIDE, AQUEOUS SOLUTION

14.3 Transport hazard class(es): 5.1

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14.4 Packing group: II
IMDG-Labels: 5.1, 8
14.5 Environmental hazards: Not a Marine Pollutant

Air transport

IATA prohibits air cargo transport.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

14.8 Special precautions for user

Keep away from food, drink and animal feedingstuffs.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Other regulations : The product contains an explosive precursor chemical whose acquisition, introduction, possession or use by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under section 3.

H271 May cause fire or explosion; strong oxidizer.
 H332 Harmful if inhaled.
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H335 May cause respiratory irritation.

Training advice

Read the safety data sheet before using the product.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as

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a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Sources of key data used to compile the Safety Data Sheet

Regulations, databases, literature, own tests.

Additions, Deletions, Revisions

Relevant changes have been marked with vertical lines.

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Annex

Contents: Exposure scenario

1. Manufacture and industrial uses

SU 3; SU4, SU8, SU9, SU 10, SU11, SU12, SU14, SU15, SU16, SU17; ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC6c, ERC6d; PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC10, PROC12, PROC13, PROC14, PROC15, PROC21; PC 0, PC1, PC2, PC8, PC9a, PC12, PC14, PC15, PC20, PC21, PC23, PC25, PC26, PC27, PC28, PC29, PC31, PC32, PC33, PC34, PC35, PC37, PC39;

2. Loading and unloading operations

SU 3; SU4, SU5, SU6a, SU6b, SU8, SU9, SU 10, SU11, SU12, SU14, SU15, SU16, SU17; ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC6c; PROC8a, PROC8b, PROC9; PC1, PC8, PC12, PC14, PC15, PC21, PC25, PC27, PC29, PC31, PC32, PC34, PC35, PC37, PC39;

3. Bleaching, Industrial use

SU 3; SU5, SU6a, SU6b; ERC4, ERC6b; PROC1, PROC2, PROC3, PROC4, PROC13, PROC19; PC23, PC24, PC26, PC34;

4. Bleaching, Professional use

SU 22; SU5, SU6a, SU6b; ERC8a, ERC8b, ERC8e; PROC1, PROC2, PROC3, PROC4, PROC13; PC23, PC24, PC26, PC34;

5. Bleaching, Consumer use

SU 21; SU5, SU6a, SU6b; ERC8a, ERC8b, ERC8e; PC23, PC24, PC26, PC34;

6. Environmental and agricultural use, Industrial use

SU 3; SU1, SU2, SU8; ERC4, ERC6b; PROC1, PROC2, PROC3, PROC4; PC 0, PC20, PC37;

7. Environmental and agricultural use, Professional use

SU 22; SU1, SU8; ERC8a, ERC8b, ERC8d, ERC8e; PROC1, PROC2, PROC3, PROC4; PC 0, PC20, PC37;

8. Environmental and agricultural use, Consumer use

SU 21; SU1; ERC8a, ERC8b, ERC8d, ERC8e; PC 0, PC20, PC37;

9. Use of hydrogen peroxide solutions in cleaning agents, Professional use

SU 22; SU4, SU20; ERC8a, ERC8b, ERC8d, ERC8e; PROC4, PROC10, PROC11, PROC13, PROC19; PC21, PC35;

10. Use of hydrogen peroxide solutions in cleaning agents, Consumer use

SU 21; SU4, SU20; ERC8a, ERC8b, ERC8d, ERC8e; PC21, PC35;

11. Hair bleaching/dyeing and tooth bleaching, Professional use

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SU 22; ERC8b; PROC19; PC39;

12. Hair bleaching/dyeing and tooth bleaching, Consumer use

SU 21; ERC8b; PC39;

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1. Short title of Exposure Scenario: Manufacture and industrial uses

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU4: Manufacture of food products SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys) SU11: Manufacture of rubber products SU12: Manufacture of plastics products, including compounding and conversion SU14: Manufacture of basic metals, including alloys SU15: Manufacture of fabricated metal products, except machinery and equipment SU16: Manufacture of computer, electronic and optical products, electrical equipment SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
Product category	: PC 0: Other (inorganic chemical, food additive) PC1: Adhesives, sealants PC2: Adsorbents PC8: Biocidal products (e.g. Disinfectants, pest control) PC9a: Coatings and paints, thinners, paint removers PC12: Fertilizers PC14: Metal surface treatment products, including galvanic and electroplating products PC15: Non-metal-surface treatment products PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC21: Laboratory chemicals PC23: Leather tanning, dye, finishing, impregnation and care products PC25: Metal working fluids PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids PC27: Plant protection products PC28: Perfumes, fragrances PC29: Pharmaceuticals PC31: Polishes and wax blends PC32: Polymer preparations and compounds PC33: Semiconductors PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids

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- PC35:** Washing and cleaning products (including solvent based products)
PC37: Water treatment chemicals
PC39: Cosmetics, personal care products
- Process category : **PROC1:** Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
PROC7: Industrial spraying
PROC10: Roller application or brushing
PROC12: Use of blowing agents in manufacture of foam
PROC13: Treatment of articles by dipping and pouring
PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
PROC15: Use as laboratory reagent
PROC21: Low energy manipulation of substances bound in materials and/ or articles
- Environmental release category : **ERC1:** Manufacture of substances
ERC2: Formulation of preparations
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b: Industrial use of reactive processing aids
ERC6c: Industrial use of monomers for manufacture of thermoplastics
ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC6c, ERC6d

Product characteristics

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Annual amount used on local scale : 75000 t/a
Regional annual tonnage : 75000 t/a
Remarks : Manufacture

Hydrogen peroxide 49,5%

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Annual amount used on local scale : 8950 t/a
 Regional annual tonnage : 8950 t/a
 Remarks : Chemical synthesis
 Annual amount used on local scale : 1010 t/a
 Regional annual tonnage : 5050 t/a
 Remarks : Chemical applications

Environment factors not influenced by risk management

Dilution Factor (River) : 300
 Dilution Factor (Coastal Areas) : 1,000
 Remarks : Manufacture
 Dilution Factor (River) : 40
 Dilution Factor (Coastal Areas) : 400
 Remarks : Chemical synthesis
 Dilution Factor (River) : 10
 Dilution Factor (Coastal Areas) : 100
 Remarks : Chemical applications

Other given operational conditions affecting environmental exposure

Continuous exposure
 Number of emission days per year : 360
 Emission or Release Factor: Air : 0.01 %
 Emission or Release Factor: Water : 0.3 %
 Emission or Release Factor: Soil : 0.01 %
 Remarks : Manufacture

Continuous exposure
 Number of emission days per year : 300
 Emission or Release Factor: Air : 0.1 %
 Emission or Release Factor: Water : 0.7 %
 Emission or Release Factor: Soil : 0.01 %
 Remarks : Chemical synthesis

Continuous exposure
 Number of emission days per year : 300
 Emission or Release Factor: Air : 0.1 %
 Emission or Release Factor: Water : 0.5 %
 Emission or Release Factor: Soil : 0.1 %
 Remarks : Chemical applications

A wastewater flow : 7000 m³/d
 Remarks : Manufacture
 A wastewater flow : 10000 m³/d
 Remarks : Chemical synthesis
 A wastewater flow : 2000 m³/d
 Remarks : Chemical applications

Technical conditions and measures / Organizational measures

Ref. 1.3/GB/EN

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Air : Passing of waste air through activated carbon filters
Water : Optional pre-treatment of wastewater by steam stripping.
Treatment by one or a combination of following techniques:
Biological wastewater treatment, ozonation or liquid phase
carbon adsorption.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Can be incinerated, when in compliance with local regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 90% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 90% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Ref. 1.3/GB/EN

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Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristicsConcentration of the Substance in Mixture/Article : Up to 90% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa**Frequency and duration of use**

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.5 Contributing scenario controlling worker exposure for: PROC4, PROC5, PROC15

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Product characteristics

Concentration of the Substance in Mixture/Article Up to 90% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.7 Contributing scenario controlling worker exposure for: PROC7

Product characteristics

Concentration of the Substance in Mixture/Article Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear respiratory protection. (Effectiveness: 90 %)Wear protective gloves/ protective clothing/ eye

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Hydrogen peroxide 49,5%

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protection/ face protection.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.8 Contributing scenario controlling worker exposure for: PROC10, PROC13

Product characteristicsConcentration of the Substance in Mixture/Article : Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa**Frequency and duration of use**

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.9 Contributing scenario controlling worker exposure for: PROC12

Product characteristicsConcentration of the Substance in Mixture/Article : Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa**Frequency and duration of use**

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

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Hydrogen peroxide 49,5%

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Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.11 Contributing scenario controlling worker exposure for: PROC14

Product characteristicsConcentration of the Substance in Mixture/Article : Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa**Frequency and duration of use**

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.13 Contributing scenario controlling worker exposure for: PROC21

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 90% w/w

Frequency and duration of use

Duration of the activity : < 480 min

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Hydrogen peroxide 49,5%

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Human factors not influenced by risk management

 Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation and reference to its source
Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES	Manufacture	Freshwater	PEC	0.009mg/l	0.714
	EUSES	Chemical synthesis	Freshwater	PEC	0.0063mg/l	0.508
	EUSES	Chemical applications	Freshwater	PEC	0.0086mg/l	0.681

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA		Worker - inhalative, long-term - systemic	0.014 mg/m ³	0.01
PROC2	ECETOC TRA		Worker - inhalative, long-term - systemic	0.142 mg/m ³	0.1
PROC3	ECETOC TRA		Worker - inhalative, long-term - systemic	0.298 mg/m ³	0.21
PROC4,	ECETOC TRA		Worker -	0.496 mg/m ³	0.35

Hydrogen peroxide 49,5%

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PROC5, PROC15			inhalative, long-term - systemic		
PROC7	ECETOC TRA		Worker - inhalative, long-term - systemic	0.354 mg/m ³	0.51
PROC10, PROC13	ECETOC TRA		Worker - inhalative, long-term - systemic	0.708 mg/m ³	0.51
PROC12	ECETOC TRA		Worker - inhalative, long-term - systemic	0.283 mg/m ³	0.2
PROC14	ECETOC TRA		Worker - inhalative, long-term - systemic	0.354 mg/m ³	0.25
PROC21	ECETOC TRA	RCR not quantifiable			

Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., .

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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Hydrogen peroxide 49,5%

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1. Short title of Exposure Scenario: Loading and unloading operations

- | | |
|------------------|---|
| Main User Groups | : SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites |
| Sector of use | : SU4: Manufacture of food products
SU5: Manufacture of textiles, leather, fur
SU6a: Manufacture of wood and wood products
SU6b: Manufacture of pulp, paper and paper products
SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
SU9: Manufacture of fine chemicals
SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
SU11: Manufacture of rubber products
SU12: Manufacture of plastics products, including compounding and conversion
SU14: Manufacture of basic metals, including alloys
SU15: Manufacture of fabricated metal products, except machinery and equipment
SU16: Manufacture of computer, electronic and optical products, electrical equipment
SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment |
| Product category | : PC1: Adhesives, sealants
PC8: Biocidal products (e.g. Disinfectants, pest control)
PC12: Fertilizers
PC14: Metal surface treatment products, including galvanic and electroplating products
PC15: Non-metal-surface treatment products
PC21: Laboratory chemicals
PC25: Metal working fluids
PC27: Plant protection products
PC29: Pharmaceuticals
PC31: Polishes and wax blends
PC32: Polymer preparations and compounds
PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
PC35: Washing and cleaning products (including solvent based products)
PC37: Water treatment chemicals
PC39: Cosmetics, personal care products |
| Process category | : PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities |

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PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Environmental release category : **ERC1:** Manufacture of substances
ERC2: Formulation of preparations
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b: Industrial use of reactive processing aids
ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC4, ERC6a, ERC6b, ERC6c

Product characteristics

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0 %
 Emission or Release Factor: Water : 0 %
 Emission or Release Factor: Soil : 0 %
 Remarks : No release to the environment is expected.

2.2 Contributing scenario controlling worker exposure for: PROC8a

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 90% w/w
 Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

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Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.3 Contributing scenario controlling worker exposure for: PROC8b

Product characteristicsConcentration of the Substance in Mixture/Article : Up to 90% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa**Frequency and duration of use**

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.4 Contributing scenario controlling worker exposure for: PROC9

Product characteristics

Hydrogen peroxide 49,5%

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Concentration of the Substance in Mixture/Article : Up to 90% w/w
 Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC8a	ECETOC TRA		Worker - inhalative, long-term - systemic	0.99 mg/m ³ (max 70% w/w)	0.71
PROC8b	ECETOC TRA		Worker - inhalative, long-term - systemic	0.21 mg/m ³ (max 90% w/w)	0.15
PROC9	ECETOC TRA		Worker - inhalative, long-term - systemic	0.71 mg/m ³ (max 90% w/w)	0.51

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Environmental exposure assessment for this scenario is not relevant., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Bleaching, Industrial use

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU5: Manufacture of textiles, leather, fur SU6a: Manufacture of wood and wood products SU6b: Manufacture of pulp, paper and paper products
Product category	: PC23: Leather tanning, dye, finishing, impregnation and care products PC24: Lubricants, greases, release products PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available
Environmental release category	: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b

Product characteristics

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Regional annual tonnage	: 43600 t/a
Annual amount used on local scale	: 9810 t/a
Remarks	: Bleaching of pulp
Regional annual tonnage	: 2025 t/a
Annual amount used on local scale	: 405 t/a
Remarks	: Bleaching of other materials

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Environment factors not influenced by risk management

Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Continuous exposure
Number of emission days per year : 360
Emission or Release Factor: Air : 0.1 %
Emission or Release Factor: Water : 0.9 %
Emission or Release Factor: Soil : 0.01 %
Remarks : Bleaching of pulp

Continuous exposure
Number of emission days per year : 300
Emission or Release Factor: Air : 1 %
Emission or Release Factor: Water : 0.9 %
Emission or Release Factor: Soil : 0.01 %
Remarks : Bleaching of other materials

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Onsite sewage treatment plant
Flow rate of sewage treatment : 17,500 m³/d
plant effluent
Effectiveness (of a measure) : 99.3 %
Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment : 2,000 m³/d
plant effluent
Effectiveness (of a measure) : 99.3 %

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Can be incinerated, when in compliance with local regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 35% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Ref. 1.3/GB/EN

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Breathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC13

Product characteristicsConcentration of the Substance in Mixture/Article : Up to 35% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa**Frequency and duration of use**

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 35% w/w

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Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 35% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

Hydrogen peroxide 49,5%

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3. Exposure estimation and reference to its source
Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES	Bleaching of pulp	Freshwater	PEC	0.0125mg/l	0.99
	EUSES	Bleaching of other materials	Freshwater	PEC	0.006mg/l	0.48

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA		Worker - inhalative, long-term - systemic	0.005 mg/m ³	0.004
PROC2, PROC13	ECETOC TRA		Worker - inhalative, long-term - systemic	0.4958 mg/m ³	0.35
PROC3	ECETOC TRA		Worker - inhalative, long-term - systemic	0.1488 mg/m ³	0.11
PROC4	ECETOC TRA		Worker - inhalative, long-term - systemic	0.2479 mg/m ³	0.18

Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

Ref. 1.3/GB/EN

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1. Short title of Exposure Scenario: Bleaching, Professional use

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sector of use	: SU5: Manufacture of textiles, leather, fur SU6a: Manufacture of wood and wood products SU6b: Manufacture of pulp, paper and paper products
Product category	: PC23: Leather tanning, dye, finishing, impregnation and care products PC24: Lubricants, greases, release products PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC13: Treatment of articles by dipping and pouring
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8e

Product characteristics

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Annual amount used on local scale	: 43600 t/a
Annual amount used on local scale	: 9810 t/a
Remarks	: Bleaching of pulp
Regional annual tonnage	: 2025 t/a
Annual amount used on local scale	: 405 t/a
Remarks	: Bleaching of other materials

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Environment factors not influenced by risk management

Dilution Factor (River) : 10
 Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Continuous exposure
 Number of emission days per year : 360
 Emission or Release Factor: Air : 0.1 %
 Emission or Release Factor: Water : 0.9 %
 Emission or Release Factor: Soil : 0.01 %
 Remarks : Bleaching of pulp

Continuous exposure
 Number of emission days per year : 300
 Emission or Release Factor: Air : 1 %
 Emission or Release Factor: Water : 0.9 %
 Emission or Release Factor: Soil : 0.01 %
 Remarks : Bleaching of other materials

Technical conditions and measures / Organizational measures

Water : Wastewater should be send to public sewerage system, where rapid decomposition of hydrogen peroxide in contact with sewage will occur.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
 Flow rate of sewage treatment : 2,000 m³/d
 plant effluent
 Effectiveness (of a measure) : 99.3 %

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Can be incinerated, when in compliance with local regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 35% w/w
 Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the acitivity : < 480 min

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Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide extraction ventilation at points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristicsConcentration of the Substance in Mixture/Article : Up to 35% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa**Frequency and duration of use**

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

Concentration of the Substance in : Up to 35% w/w

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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Mixture/Article

Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa

Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in : Up to 35% w/w

Mixture/Article

Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa

Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is

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Hydrogen peroxide 49,5%

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implemented.

2.6 Contributing scenario controlling worker exposure for: PROC13

Product characteristics

Concentration of the Substance in Mixture/Article Up to 12% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.7 Contributing scenario controlling worker exposure for: PROC19

Product characteristics

Concentration of the Substance in Mixture/Article Up to 35% w/w, Up to 12% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Hydrogen peroxide 49,5%

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Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation and reference to its source
Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES	Bleaching of pulp	Freshwater	PEC	0.0125mg/l	0.99
	EUSES	Bleaching of other materials	Freshwater	PEC	0.006mg/l	0.48

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA		Worker - inhalative, long-term - systemic	0.005 mg/m ³	0.004
PROC2	ECETOC TRA		Worker - inhalative, long-term - systemic	0.4958 mg/m ³	0.35
PROC3	ECETOC TRA		Worker - inhalative, long-term - systemic	0.2975 mg/m ³	0.21
PROC4	ECETOC TRA		Worker - inhalative, long-term - systemic	0.9917 mg/m ³	0.71
PROC13	ECETOC TRA		Worker - inhalative, long-term - systemic	0.34 mg/m ³	0.24
PROC19	ECETOC TRA		Worker - inhalative, long-term - systemic	0.85 mg/m ³	0.61

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Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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Hydrogen peroxide 49,5%

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1. Short title of Exposure Scenario: Bleaching, Consumer use

Main User Groups	: SU 21: Consumer uses: Private households (= general public = consumers)
Sector of use	: SU5: Manufacture of textiles, leather, fur SU6a: Manufacture of wood and wood products SU6b: Manufacture of pulp, paper and paper products
Product category	: PC23: Leather tanning, dye, finishing, impregnation and care products PC24: Lubricants, greases, release products PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8e

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Annual amount used on local scale	: 43600 t/a
Annual amount used on local scale	: 9810 t/a
Remarks	: Bleaching of pulp
Regional annual tonnage	: 2025 t/a
Annual amount used on local scale	: 405 t/a
Remarks	: Bleaching of other materials

Environment factors not influenced by risk management

Dilution Factor (River)	: 10
Dilution Factor (Coastal Areas)	: 100

Other given operational conditions affecting environmental exposure

Continuous exposure	
Number of emission days per year	: 360
Emission or Release Factor: Air	: 0.1 %

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Emission or Release Factor: Water : 0.9 %
 Emission or Release Factor: Soil : 0.01 %
 Remarks : Bleaching of pulp

Continuous exposure
 Number of emission days per year : 300
 Emission or Release Factor: Air : 1 %
 Emission or Release Factor: Water : 0.9 %
 Emission or Release Factor: Soil : 0.01 %
 Remarks : Bleaching of other materials

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
 Flow rate of sewage treatment : 2,000 m³/d
 plant effluent
 Effectiveness (of a measure) : 99.3 %
 Procedures to limit air emissions :
 from Sewage Treatment Plant

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Can be incinerated, when in compliance with local regulations.

2.2 Contributing scenario controlling consumer exposure for: PC23, PC24, PC26, PC34

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 12% w/w
 Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Amount used

Amount used per event : <= 100 mL

Frequency and duration of use

Exposure duration : <= 10 min
 Frequency of use : <= 4 days/week

Human factors not influenced by risk management

Body weight : 60 kg

Other given operational conditions affecting consumers exposure

Outdoor / Indoor : Indoor

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid contact with skin., The use of gloves (PVC, rubber) is

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recommended., Do not touch eyes when using this product.,
The use of safety glasses is recommended.

3. Exposure estimation and reference to its source
Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES	Bleaching of pulp	Freshwater	PEC	0.0125mg/l	0.99
	EUSES	Bleaching of other materials	Freshwater	PEC	0.006mg/l	0.48

Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PC23 PC24 PC26 PC34	EU RAR	Short-term	Consumer - inhalative, short-term - systemic	0.13 mg/m ³	0.067

Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified.Worst case scenario

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

All relevant information on the safe consumer use has been outlined in the section 2.

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1. Short title of Exposure Scenario: Environmental and agricultural use, Industrial use

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU1: Agriculture, forestry, fishery SU2: Mining, (including offshore industries) SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
Product category	: PC 0: Other (environmental remediation product) PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37: Water treatment chemicals
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
Environmental release category	: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b

Product characteristics

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Regional annual tonnage : 2465 t/a
Annual amount used on local scale : 4.93 t/a

Other given operational conditions affecting environmental exposure

Number of emission days per year : 15
Emission or Release Factor: Air : 10 %
Emission or Release Factor: Water : 50 %
Emission or Release Factor: Soil : 80 %

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2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

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Technical conditions and measures

Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

Concentration of the Substance in Mixture/Article	Up to 50% w/w
Physical Form (at time of use)	: Liquid, vapour pressure < 0.5 kPa
Vapour pressure	: 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article	Up to 50% w/w
Physical Form (at time of use)	: Liquid, vapour pressure < 0.5 kPa
Vapour pressure	: 299 Pa

Frequency and duration of use

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Duration of the activity : < 480 min

Human factors not influenced by risk management

 Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation and reference to its source
Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES		Freshwater	PEC	0.0085mg/l	0.675

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA		Worker - inhalative, long-term - systemic	0.007 mg/m ³	0.01
PROC2	ECETOC TRA		Worker - inhalative, long-term - systemic	0.708 mg/m ³	0.51
PROC3	ECETOC TRA		Worker - inhalative, long-term - systemic	0.2125 mg/m ³	0.15
PROC4	ECETOC TRA		Worker - inhalative, long-term - systemic	0.3542 mg/m ³	0.25

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Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Environmental and agricultural use, Professional use

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sector of use	: SU1: Agriculture, forestry, fishery SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
Product category	: PC 0: Other (environmental remediation product) PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37: Water treatment chemicals
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8d, ERC8e

Product characteristics

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Regional annual tonnage : 2465 t/a
Annual amount used on local scale : 4.93 t/a

Other given operational conditions affecting environmental exposure

Number of emission days per year : 15

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Emission or Release Factor: Air : 10 %
Emission or Release Factor: Water : 5 %
Emission or Release Factor: Soil : 80 %

2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Provide extract ventilation to points where emissions occur.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

Ref. 1.3/GB/EN

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Breathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristicsConcentration of the Substance in Mixture/Article : Up to 50% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa**Frequency and duration of use**

Duration of the activity : < 480 min

Human factors not influenced by risk managementBreathing volume : 10 m³/8 hours**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 35% w/w

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : < 480 min

Human factors not influenced by risk management

 Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation and reference to its source
Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES		Freshwater	PEC	0.0085mg/l	0.675

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA		Worker - inhalative, long-term - systemic	0.007 mg/m ³	0.005
PROC2	ECETOC TRA		Worker - inhalative, long-term - systemic	0.7084 mg/m ³	0.51
PROC3	ECETOC TRA		Worker - inhalative, long-term - systemic	0.425 mg/m ³	0.3
PROC4	ECETOC TRA		Worker - inhalative, long-	0.9916 mg/kg	0.71

Ref. 1.3/GB/EN

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			term - systemic		
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Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Environmental and agricultural use, Consumer use

Main User Groups	: SU 21: Consumer uses: Private households (= general public = consumers)
Sector of use	: SU1: Agriculture, forestry, fishery
Product category	: PC 0: Other (environmental remediation product) PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC37: Water treatment chemicals
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8d, ERC8e

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Regional annual tonnage : 2465 t/a
Annual amount used on local scale : 4.93 t/a

Other given operational conditions affecting environmental exposure

Number of emission days per year : 15
Emission or Release Factor: Air : 10 %
Emission or Release Factor: Water : 5 %
Emission or Release Factor: Soil : 80 %

2.2 Contributing scenario controlling consumer exposure for: PC 0, PC20, PC37

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 12% w/w

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Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Amount used

Applied amount : 2.5 kg
 Weight fraction compound : 12 %

Frequency and duration of use

Exposure duration : 45 s
 Application duration : 18 s

Human factors not influenced by risk management

Body weight : 65 kg

Other given operational conditions affecting consumers exposure

Outdoor / Indoor : Indoor
 Room size : 1 m³
 Ventilation rate per hour : 0.5

Release area : 20 cm²
 Mass transfer rate : 0.404

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid contact with skin., The use of gloves (PVC, rubber) is recommended., Do not touch eyes when using this product., The use of safety glasses is recommended.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES		Freshwater	PEC	0.0085mg/l	0.675

Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PC0 PC20 PC37	ConsExpo (v4.1)		Consumer - inhalative, short-term - systemic	0.065 mg/m ³	0.034

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

All relevant information on the safe consumer use has been outlined in the section 2.

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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1. Short title of Exposure Scenario: Use of hydrogen peroxide solutions in cleaning agents, Professional use

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sector of use	: SU4: Manufacture of food products SU20: Health services
Product category	: PC21: Laboratory chemicals PC35: Washing and cleaning products (including solvent based products)
Process category	: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8d, ERC8e

Product characteristics

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Regional annual tonnage : 750000 kg

Environment factors not influenced by risk management

Dilution Factor (River) : 10

Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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Number of emission days per year : 365

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment : 2,000 m³/d
plant effluent
Effectiveness (of a measure) : 99.3 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment : All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

2.2 Contributing scenario controlling worker exposure for: PROC4, PROC10, PROC11, PROC13, PROC19**Product characteristics**

Concentration of the Substance in Mixture/Article : Up to 12% w/w
Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
Vapour pressure : 299 Pa

Amount used

Amount per Application : 0.2 kg

Frequency and duration of use

Exposure duration : 5 min
Application duration : 5 min

Human factors not influenced by risk management

Breathing volume : 10 m³/8 hours

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor
Room size : 2.5 m³
Ventilation rate per hour : 2

Conditions and measures related to personal protection, hygiene and health evaluation

The use of eye protection is recommended to avoid contact of the eyes with the undiluted product., The use of gloves (PVC, rubber) is recommended.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation and reference to its source

Hydrogen peroxide 49,5%

Ref. 1.3/GB/EN

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Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES		Freshwater	PEC	0.0037mg/l	0.294

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
Spr Clean.	ConsExpo (v4.1)		Worker - inhalative, short-term - systemic	0.002 mg/m ³ (max 7% w/w)	0.0007
W/B	ConsExpo (v4.1)		Worker - inhalative, short-term - systemic	1.07 mg/m ³ (max 7% w/w)	0.357
San Clean.	ConsExpo (v4.1)		Worker - inhalative, short-term - systemic	1.16 mg/m ³ (max 12% w/w)	0.387

Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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1. Short title of Exposure Scenario: Use of hydrogen peroxide solutions in cleaning agents, Consumer use

Main User Groups	: SU 21: Consumer uses: Private households (= general public = consumers)
Sector of use	: SU4: Manufacture of food products SU20: Health services
Product category	: PC21: Laboratory chemicals PC35: Washing and cleaning products (including solvent based products)
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8d, ERC8e

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Regional annual tonnage : 750000 kg

Environment factors not influenced by risk management

Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 365

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent : 2,000 m³/d
Effectiveness (of a measure) : 99.3 %
Procedures to limit air emissions from Sewage Treatment Plant :

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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Conditions and measures related to external treatment of waste for disposal

Waste treatment : All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

2.2 Contributing scenario controlling consumer exposure for: PC21, PC35

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 12% w/w
 Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Amount used

Amount used per event : 200 g
 Weight fraction compound : 0.12

Frequency and duration of use

Exposure duration : 5 min
 Application duration : 2 min
 Spray duration : 10 min
 Frequency of use : 1 times a day

Human factors not influenced by risk management

Body weight : 60 kg

Other given operational conditions affecting consumers exposure

Outdoor / Indoor : Indoor
 Room size : 2.5 m³
 Ventilation rate per hour : 2

 Mass transfer rate : 0.404
 Release area : 750 cm²

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid contact with skin., The use of gloves (PVC, rubber) is recommended., Do not touch eyes when using this product., The use of safety glasses is recommended.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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	Method					ratio (PEC/PNEC):
	EUSES		Freshwater	PEC	0.0037mg/l	0.294

Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PC21 PC35 San Clean.	ConsExpo (v4.1)		Consumer - inhalative, short-term - systemic	1.16 mg/m ³	0.387

Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

All relevant information on the safe consumer use has been outlined in the section 2.

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

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1. Short title of Exposure Scenario: Hair bleaching/dyeing and tooth bleaching, Professional use

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Product category	: PC39: Cosmetics, personal care products
Process category	: PROC19: Hand-mixing with intimate contact and only PPE available
Environmental release category	: ERC8b: Wide dispersive indoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8b

Product characteristics

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Regional annual tonnage : 750000 kg

Environment factors not influenced by risk managementDilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100**Other given operational conditions affecting environmental exposure**

Number of emission days per year : 365

Conditions and measures related to municipal sewage treatment plantType of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment : 2,000 m³/d
plant effluent
Effectiveness (of a measure) : 99.3 %

2.2 Contributing scenario controlling worker exposure for: PROC19

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 18% w/w

Hydrogen peroxide 49,5%

Ref. 1.3/GB/EN

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Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Frequency and duration of use

Duration of the activity : <= 30 min

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Wear protective gloves/ protective clothing/ eye protection/ face protection., Use respiratory protection if necessary.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice : Assumes a good basic standard of occupational hygiene is implemented.

3. Exposure estimation and reference to its source
Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES		Freshwater	PEC	0.0037mg/l	0.294

In accordance to the Article 14 (5b) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC., Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1., .

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

Ref. 1.3/GB/EN

Hydrogen peroxide 49,5%

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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1. Short title of Exposure Scenario: Hair bleaching/dyeing and tooth bleaching, Consumer use

Main User Groups : **SU 21:** Consumer uses: Private households (= general public = consumers)

Product category : **PC39:** Cosmetics, personal care products

Environmental release category : **ERC8b:** Wide dispersive indoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8b

Viscosity, dynamic : 1.249 mPa.s 20 °C(100 %)

Amount used

Regional annual tonnage : 750000 kg

Environment factors not influenced by risk management

Dilution Factor (River) : 10
 Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 365

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
 Flow rate of sewage treatment plant effluent : 2,000 m³/d
 Effectiveness (of a measure) : 99.3 %
 Procedures to limit air emissions from Sewage Treatment Plant :

2.2 Contributing scenario controlling consumer exposure for: PC39

Product characteristics

Concentration of the Substance in Mixture/Article : Up to 18% w/w
 Physical Form (at time of use) : Liquid, vapour pressure < 0.5 kPa
 Vapour pressure : 299 Pa

Frequency and duration of use

Hydrogen peroxide 49,5%

Ref. 1.3/GB/EN

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Exposure duration : <= 30 min

Other given operational conditions affecting consumers exposure

Outdoor / Indoor : Indoor

3. Exposure estimation and reference to its source
Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
	EUSES		Freshwater	PEC	0.0037mg/l	0.294

In accordance to the Article 14 (5b) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC., Risk from environmental exposure is driven by fresh water., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

Ref. 2.9/GB/EN

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Revision Date: 12.01.2022

Previous date: 06.05.2021

Print Date:27.06.2022

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier****Commercial Product Name**
FennoSpec 7810T**1.2 Relevant identified uses of the substance or mixture and uses advised against**
Use of the Substance/Mixture**Recommended restrictions on use**
For industrial use only.**1.3 Details of the supplier of the safety data sheet**Kemira Oyj
P.O. Box 33000101 HELSINKI FINLAND
Telephone+358108611, Telefax. +358108621124
ProductSafety.FI.Helsinki@kemira.com**1.4 Emergency telephone number**

Carechem 24 International: +44 (0) 1235 239 670

SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****Classification according to Regulation (EU) 1272/2008(CLP)**

Skin corrosion; Category 1B; Causes severe skin burns and eye damage.

Acute toxicity; Category 4; Harmful if swallowed.

Acute toxicity; Category 4; Harmful if inhaled.

Corrosive to metals; Category 1; May be corrosive to metals.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)**

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Hazard pictograms



Signal word

: Danger

Hazard statements

:	H314	Causes severe skin burns and eye damage.
	H302	Harmful if swallowed.
	H332	Harmful if inhaled.
	H290	May be corrosive to metals.

Precautionary statements

:	Prevention:	
	P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
	P260	Do not breathe vapours.
	P264	Wash skin thoroughly with plenty of soap and water after handling.
	Response:	
	P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
	P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P309 + P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/ physician.

Hazardous components which must be listed on the label:

- 64-18-6 Formic acid
- 7664-93-9 Sulfuric acid

Additional Labelling:

EUH071 Corrosive to the respiratory tract.

2.3 Other hazards

Remarks; None known. This mixture contains no substance considered to be persistent,

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bioaccumulating and toxic (PBT). This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature of the mixture	Mixture of acids in aqueous solution		
CAS/EU number/REACH Registration Number	Chemical name of the substance	Concentration	Classification according to Regulation (EU) 1272/2008(CLP)
64-18-6 200-579-1 01-2119491174-37-0003	Formic acid	70 - 78 %	Skin Corr. Category 1A,H314 Flam. Liq. Category 3,H226 Acute Tox. Category 4,H302 Acute Tox. Category 3,H331 EUH071
7664-93-9 231-639-5 01-2119458838-20	Sulfuric acid	5 - 15 %	Skin Corr. Category 1A,H314

Further information

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation

Move to fresh air. Keep warm and in a quiet place. Obtain medical attention.

Skin contact

Wash off immediately with plenty of water removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 30 minutes. Call a physician immediately.

Rinse immediately with plenty of water, also under the eyelids, for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Ingestion

Rinse mouth. Few gulps of water can be drunk to reduce irritation. Do NOT induce vomiting. Obtain medical attention.

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4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Causes severe skin burns and eye damage., Harmful if swallowed., Harmful if inhaled.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Symptomatic treatment.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Extinguishing media : Dry powder
Carbon dioxide (CO₂)
Foam
Water spray
Unsuitable : Water spray jet
extinguishing media

5.2 Special hazards arising from the substance or mixture

Heating can release hazardous gases.
Carbon monoxide, Sulphur oxides

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Splashproof protective suit.

Cool containers/tanks with water spray.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Avoid contact with skin and eyes. Wear personal protective equipment. For personal protection see section 8. Never add water to this product.

6.2 Environmental precautions

Should not be released into the environment. Dam up. Take up mechanically and collect into suitable containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).

6.3 Methods and materials for containment and cleaning up

Neutralize with sodium carbonate. Dispose of as special waste in compliance with local and national regulations.

6.4 Reference to other sections

For personal protection see section 8. For disposal considerations see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment. Handle and open container with care. Do not breathe gas/fumes/vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

The product may form CO (carbon monoxide) under prolonged storage. Keep containers tightly closed in a cool, well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Protect from sunlight. Keep away from combustible material. Store in original container.

Materials for packaging

Suitable material: original acid resistant container

Materials to avoid:

Bases, Copper, Aluminium, Sulphides, Oxidizing agents, Water

7.3 Specific end use(s)

No further information available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Formic acid

GB EH40, 2005-04-06, TWA = 5 ppm = 9.6 mg/m³, 14: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure limit should be used.

DNEL

Formic acid

: Exposure routes: Worker - Inhalative, short-term - local and systemic
Value: 19 mg/m³

Exposure routes: Worker - inhalative, long-term - local and systemic

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	Value: 9.5 mg/m ³
Sulfuric acid	: Exposure routes: Worker - inhalative, short-term - local Value: 0.1 mg/m ³
	Exposure routes: Worker - inhalative, long-term - local Value: 0.05 mg/m ³
PNEC	
Formic acid	: Fresh water Value: 2 mg/l
	Marine water Value: 0.2 mg/l
	Intermittent use/release Value: 1 mg/l
	Fresh water sediment Value: 13.4 mg/kg dw
	Marine sediment Value: 1.34 mg/kg dw
	Soil Value: 1.5 mg/kg dw
	STP Value: 7.2 mg/l

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.2 Individual protection measures, such as personal protective equipment

Hand protection

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Eye protection

Ref. 2.9/GB/EN

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Tightly fitting safety goggles / Face-shield
Skin and body protection

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. (filter E)

8.2.3 Environmental exposure controls

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties General Information (appearance, odour)

Physical state	liquid,
Colour	colourless, clear
Odour	pungent
Odour Threshold	not determined

Important health safety and environmental information

pH	
Boiling point/boiling range	> 100 °C
Flash point	
Evaporation rate	
Flammability (solid, gas) :	Not applicable
Explosive properties:	
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	
Solubility(ies):	
Water solubility	completely soluble
Partition coefficient: n-octanol/water	
Auto-ignition temperature	
Thermal decomposition	
Viscosity:	
Oxidizing	Not oxidizing

Ref. 2.9/GB/EN

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9.2 Other information**SECTION 10: STABILITY AND REACTIVITY****10.1 Reactivity**

Never add water to this product.

10.2 Chemical stability

Strong acid decomposes slowly to form CO (carbon monoxide).

10.3 Possibility of hazardous reactions

Hazardous reactions : Do not add water into strong acid (risk of splashes).
Note: The product may form CO (carbon monoxide) under prolonged storage.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Bases
Copper
Aluminium
Sulphides
Oxidizing agents
Water

10.6 Hazardous decomposition products

Hazardous decomposition products : Thermal decomposition products:
Carbon oxides
Sulphur oxides

: Strong acid decomposes slowly to form CO (carbon monoxide).

Ref. 2.9/GB/EN

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SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity****Formic acid:**

LD50/Oral/Rat/male and female: 730 mg/kg

LC50/Inhalation/4 h/Rat/male and female: 7.85 mg/l

Remarks: Corrosive to the respiratory tract.

Sulfuric acid:

LD50/Oral/Rat: 2,140 mg/kg

Based on available data, the classification criteria are not met.

LC50/Inhalation/4 h/Rat/male and female: 0.375 mg/l

Although the LC50 values from the various inhalation toxicity studies performed with sulphuric acid theoretically trigger classification for Acute inhalation toxicity, classification is not proposed. The effects of sulphuric acid following inhalation are entirely due to local irritation of the respiratory tract: there is no evidence for the systemic toxicity of sulphuric acid in any study, as effects are limited to the site of contact. Classification for acute inhalation toxicity is not considered to be appropriate.

Acute dermal toxicity/Dermal:

Remarks: study scientifically unjustified

Based on available data, the classification criteria are not met.

Irritation and corrosion

Skin: Causes severe burns.

Eyes: Risk of serious damage to eyes.

Mucous membranes:

At high concentrations vapours may cause inflammation of conjunctiva and cornea.

Formic acid:

Skin: Corrosive

Based on Animal Evidence and Experience with human exposure

Eyes: Corrosive

Based on Animal Evidence and Experience with human exposure

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Sulfuric acid:

Skin: Corrosive Causes severe skin burns and eye damage.

Eyes: Corrosive Causes serious eye damage.

Sensitisation

No data available

Formic acid:Guinea pig/Buehler Test/OECD Test Guideline 406: Not sensitizing.
This substance is not classified as a sensitizer.**Sulfuric acid:**Remarks: study scientifically unjustified
Based on available data, the classification criteria are not met.**Long term toxicity****Formic acid:**

Repeated dose toxicity:

Oral/Rat/male and female/1 year/OECD Test Guideline 453:

NOAEL: 142 mg/kg

Remarks: calculated , Read-across (Analogy)

Inhalation/Rat/male and female/13 weeks/OECD Test Guideline 413:

Remarks: NOAEC : Local 0,122 mg/l , Systemic toxicity 0,244 mg/l

Carcinogenicity

Did not show carcinogenic effects in animal experiments. Information given is based on data obtained from similar substances.

Mutagenicity

Salmonella typhimurium (bacterium)/Ames test/OECD Test Guideline 471:

Result: negative

Metabolic activation: with and without

mammalian cells (CHO)/In vitro gene mutation study in mammalian cells/OECD Test Guideline 476:

Result: negative

Metabolic activation: with and without

In vitro cytogenicity study in mammalian cells/Cytogenetic assay/OECD Test Guideline 479:

Result: negative

Ref. 2.9/GB/EN

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Metabolic activation: with and without

Human lymphocytes/Cytogenetic assay/OECD Test Guideline 479:

Result: negative

Metabolic activation: no

oral/Drosophila melanogaster (Common fruit fly)/male/Drosophila SLRL/OECD Test Guideline 477:

Result: negative

Reproductive toxicity

Oral/Rat/male and female/Two-generation reproductive toxicity/OECD Test Guideline 416:

NOAEL: 676 mg/kg

NOAEL F1: 676 mg/kg

Remarks: calculated Read-across (Analogy)

In animal studies, did not interfere with reproduction. Information given is based on data obtained from similar substances.

Teratogenicity

Oral:

Animal testing did not show any effects on foetal development. Information given is based on data obtained from similar substances.

Sulfuric acid:

Repeated dose toxicity:

Inhalation/Rat/28 d/OECD Test Guideline 412:

NOAEL: = 0.0003 mg/l

Carcinogenicity

Based on available data, the classification criteria are not met.

Remarks: IARC

Based on very limited human data, International Agency for Research on Cancer (IARC) has classified strong inorganic acid mists as carcinogenic to humans. However, IARC has not classified pure sulphuric acid for its carcinogenic effects.

Mutagenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

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Remarks: study scientifically unjustified
Based on available data, the classification criteria are not met.

Teratogenicity

Inhalation/Rabbit/OECD Test Guideline 414:

NOAEL: 0.019 mg/kg

Mother: 0.006 mg/kg

Did not show teratogenic effects in animal experiments.

Inhalation/Mouse/OECD Test Guideline 414:

NOAEL: 0.019 mg/kg

Mother: 0.006 mg/kg

Did not show teratogenic effects in animal experiments.

Human experience

Skin contact

May cause skin irritation and/or dermatitis.

Eye contact

vapour,

Remarks: At high concentrations

May cause: Inflammation

SECTION 12: ECOLOGICAL INFORMATION
12.1 Toxicity
Aquatic toxicity
Formic acid:

LC50/96 h/Danio rerio (zebra fish)/static test/OECD Test Guideline 203: 130 mg/l

fresh water Test results on an analogous product

EC50/48 h/Daphnia magna (Water flea)/static test/OECD Test Guideline 202: 365 mg/l

fresh water Mobility Test results on an analogous product

EC50/72 h/Pseudokirchneriella subcapitata (microalgae)/static test/OECD Test Guideline 201: 1,240 mg/l

fresh water Test results on an analogous product

Sulfuric acid:

LC50/96 h/Lepomis macrochirus (bluegill sunfish)/static test: 16 mg/l

fresh water

NOEC/65 d/Jordanella floridae (Flagfish)/flow-through test: 0.025 mg/l

fresh water

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EC50/48 h/Daphnia magna (Water flea)/static test/OECD Test Guideline 202: > 100 mg/l
fresh water

EC50/72 h/Desmodesmus subspicatus (green algae)/static test/OECD Test Guideline 201: > 100 mg/l

Remarks: May be harmful to aquatic organisms because of the low pH value.

NOEC/Tanytarsus dissimilis/static test: 0.15 mg/l

Remarks: Fresh water

Toxicity to other organisms**Formic acid:**

NOEC/13 d/active sludge, community/static test/Algal inhibition test: 72 mg/l

Remarks: fresh water

Respiration inhibition of activated sludge : no (at low concentrations)

Sulfuric acid:

NOEC/37 d/active sludge/static test: 26 g/l

fresh water

NOEC/30 d/active sludge/static test: > 30 g/l

fresh water

12.2 Persistence and degradability

Chemical Oxygen Demand (COD): 348 mg/g

Biological degradability:**Formic acid:**

Readily biodegradable, according to appropriate OECD test.

Biodegradability in Seawater : Readily biodegradable

Sulfuric acid:

The methods for determining biodegradability are not applicable to inorganic substances.

Chemical degradation:**Formic acid:**

t1/2-value: > 5 Days(pH , 50 °C) (Hydrolysis)

Remarks: pH 4/7/9

Does not hydrolyse.

t1/2-value: 30.1 Days (Photodegradation)

Degradation by hydroxyl radicals.

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12.3 Bioaccumulative potential

Formic acid:

Bioconcentration factor (BCF)/calculated: 3.2

Partition coefficient: n-octanol/water: log Pow: -2.1; Does not significantly accumulate in organisms.

12.4. Mobility in soil

Mobility

Water solubility: completely soluble

Formic acid:

Vapour pressure:42.71 hPa (20 °C) (OECD Test Guideline 104)

Surface tension: 71.5 mN/m (20 °C) (); Surface activity is not to be expected.

Adsorption and/or desorption: Not expected to adsorb on soil.

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).

This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Dispose of as special waste in compliance with local and national regulations.

Contaminated packaging

In accordance with local and national regulations.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

3265

Land transport
ADR:
Description of the goods:

14.2 UN proper shipping name

CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Formic acid , Sulphuric acid)

14.3 Transport hazard class(es)

8

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14.4 Packing group: II
Classification code: C3
Risk code 80
ADR/RID-Labels: 8

Sea transport

IMDG:

Description of the goods:

14.2 UN proper shipping name UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (FORMIC ACID , SULPHURIC ACID)

14.3 Transport hazard class(es): 8

14.4 Packing group: II

IMDG-Labels: 8

14.5 Environmental hazards: Not a Marine Pollutant

Air transport

ICAO/IATA:

Description of the goods

14.2 UN proper shipping name UN3265, Corrosive liquid, acidic, organic, n.o.s. (Formic acid , Sulphuric acid)

14.3 Transport hazard class(es): 8

14.4 Packing group: II

ICAO-Labels: 8

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

14.8 Special precautions for user

The product may form CO (carbon monoxide) under prolonged storage.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- Other regulations :
- In the EU, this product falls under the regulation on biocidal products 528/2012.
 - In the EU, this product falls under the regulation on biocidal products 528/2012.
 - In the EU, this product falls under the regulation on biocidal

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products 528/2012.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for the main component.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under section 3.

H314	Causes severe skin burns and eye damage.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H331	Toxic if inhaled.
EUH071	Corrosive to the respiratory tract.
H314	Causes severe skin burns and eye damage.

Training advice

Read the safety data sheet before using the product.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Sources of key data used to compile the Safety Data Sheet

Regulations, databases, literature, own tests.

Additions, Deletions, Revisions

Relevant changes have been marked with vertical lines.

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1. Short title of Exposure Scenario: Formulation & (re)packing of substance and mixtures

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent
Environmental release category	: ERC2: Formulation of preparations

2.1 Contributing scenario controlling environmental exposure for: ERC2

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2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

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Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.6 Contributing scenario controlling worker exposure for: PROC5, PROC9, PROC14

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Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.7 Contributing scenario controlling worker exposure for: PROC8a

Product characteristics

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands (960 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.8 Contributing scenario controlling worker exposure for: PROC8b

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Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 97 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.9 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002
PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC2	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203
PROC3	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC3	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC4	ECETOC TRA modified version		Worker - inhalative, long-term - local	3.858 mg/m ³	0.406
PROC4	ECETOC TRA modified version		Worker - inhalative, short-term - local	7.717 mg/m ³	0.406
PROC5, PROC9, PROC14	ECETOC TRA modified version		Worker - inhalative, long-term - local	8.681 mg/m ³	0.914
PROC5, PROC9, PROC14	ECETOC TRA modified version		Worker - inhalative, short-term - local	17.363 mg/m ³	0.914
PROC8a	ECETOC TRA modified version		Worker - inhalative, long-term - local	8.681 mg/m ³	0.914

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PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	17.363 mg/m ³	0.914
PROC8b	ECETOC TRA modified version		Worker - inhalative, long-term - local	2.864 mg/m ³	0.305
PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	5.788 mg/m ³	0.305
PROC15	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC15	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Use as intermediate

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities PROC15: Use as laboratory reagent
Environmental release category	: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

2.1 Contributing scenario controlling environmental exposure for: ERC6a
2.2 Contributing scenario controlling worker exposure for: PROC1
Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use)	: Liquid, vapour pressure 0.5 - 10 kPa

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Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

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Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristicsConcentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa**Frequency and duration of use**

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.6 Contributing scenario controlling worker exposure for: PROC8a

Product characteristicsConcentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

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Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Both hands (960 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.7 Contributing scenario controlling worker exposure for: PROC8b**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 97 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.8 Contributing scenario controlling worker exposure for: PROC15

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Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
 Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002
PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC2	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203
PROC3	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508

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PROC3	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC4	ECETOC TRA modified version		Worker - inhalative, long-term - local	3.858 mg/m ³	0.406
PROC4	ECETOC TRA modified version		Worker - inhalative, short-term - local	7.717 mg/m ³	0.406
PROC8a	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC8b	ECETOC TRA modified version		Worker - inhalative, long-term - local	2.864 mg/m ³	0.305
PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	5.788 mg/m ³	0.305
PROC15	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC15	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Uses in coatings

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent
Environmental release category	: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

2.1 Contributing scenario controlling environmental exposure for: ERC4

2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

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Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

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Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristicsConcentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa**Frequency and duration of use**

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.6 Contributing scenario controlling worker exposure for: PROC5

Product characteristics

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

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Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.7 Contributing scenario controlling worker exposure for: PROC7**Product characteristics**

Concentration of the Substance in Mixture/Article : 30 %
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Two hands and forearms (1500 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

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2.8 Contributing scenario controlling worker exposure for: PROC8a

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands (960 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.9 Contributing scenario controlling worker exposure for: PROC8b

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 97 %)

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Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.10 Contributing scenario controlling worker exposure for: PROC10

Product characteristics

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands (960 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:, Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 95 %)

2.11 Contributing scenario controlling worker exposure for: PROC13

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

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Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.12 Contributing scenario controlling worker exposure for: PROC15
Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002

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PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC2	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203
PROC3	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC3	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC4	ECETOC TRA modified version		Worker - inhalative, long-term - local	3.858 mg/m ³	0.406
PROC4	ECETOC TRA modified version		Worker - inhalative, short-term - local	7.717 mg/m ³	0.406
PROC5	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC5	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC7	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.234 mg/m ³	0.761
PROC7	ECETOC TRA modified version		Worker - inhalative, short-term - local	14.469 mg/m ³	0.762
PROC8a	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC8b	ECETOC TRA		Worker -	2.864 mg/m ³	0.305

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	modified version		inhalative, long-term - local		
PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	5.788 mg/m ³	0.305
PROC10	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC10	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC13	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC13	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC15	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC15	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Use in cleaning agents

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

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Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

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Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

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2.6 Contributing scenario controlling worker exposure for: PROC8a

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands (960 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.7 Contributing scenario controlling worker exposure for: PROC8b

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

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Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.8 Contributing scenario controlling worker exposure for: PROC10

Product characteristics

Concentration of the Substance in Mixture/Article Limit the substance content in the mixture to 50 %.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands (960 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:, Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.9 Contributing scenario controlling worker exposure for: PROC11

Product characteristics

Concentration of the Substance in Mixture/Article Covers percentage substance in the product up to 15%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Two hands and forearms (1500 cm²)

Other operational conditions affecting workers exposure

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Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.10 Contributing scenario controlling worker exposure for: PROC13**Product characteristics**

Concentration of the Substance in Mixture/Article : Limit the substance content in the mixture to 50 %.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.11 Contributing scenario controlling worker exposure for: PROC19**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

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Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

 Exposed skin area : Both hands and forearms (1980 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 90 %)

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002
PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC2	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC3	ECETOC TRA modified version		Worker - inhalative, long-term - local	2.411 mg/m ³	0.254
PROC3	ECETOC TRA		Worker -	4.823 mg/m ³	0.254

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	modified version		inhalative, short-term - local		
PROC4	ECETOC TRA modified version		Worker - inhalative, long- term - local	4.823 mg/m ³	0.508
PROC4	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.464 mg/m ³	0.508
PROC8a	ECETOC TRA modified version		Worker - inhalative, long- term - local	7.717 mg/m ³	0.812
PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC8b	ECETOC TRA modified version		Worker - inhalative, long- term - local	7.717 mg/m ³	0.812
PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC10	ECETOC TRA modified version		Worker - inhalative, long- term - local	4.823 mg/m ³	0.508
PROC10	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC11	ECETOC TRA modified version		Worker - inhalative, long- term - local	7.234 mg/m ³	0.761
PROC11	ECETOC TRA modified version		Worker - inhalative, short-term - local	14.469 mg/m ³	0.762
PROC13	ECETOC TRA modified version		Worker - inhalative, long- term - local	4.823 mg/m ³	0.508
PROC13	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.464 mg/m ³	0.508
PROC19	ECETOC TRA modified version		Worker - inhalative, long-	3.280 mg/m ³	0.345

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PROC19	ECETOC TRA modified version		term - local Worker - inhalative, short-term - local	16.398 mg/m ³	0.863
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Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Use in cleaning agents

Main User Groups	: SU 21: Consumer uses: Private households (= general public = consumers)
Product category	: PC35: Washing and cleaning products (including solvent based products)
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

2.2 Contributing scenario controlling consumer exposure for: PC35

Product characteristics

Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 7.5%
Physical Form (at time of use)	: Liquid, vapour pressure 0.5 - 10 kPa

Amount used

Applied amount	: 0.025 l
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Frequency and duration of use

Exposure duration	: 15 min
Application duration	: 120 min

Human factors not influenced by risk management

Body weight	: 65 kg
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Other given operational conditions affecting consumers exposure

Room size	: 58 m ³
Ventilation rate per hour	: 0.5

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3. Exposure estimation and reference to its source

Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PC35	EASY TRA v2.0		Acute inhalation local exposure	2.694 mg/m ³	0.898
PC35	EASY TRA v2.0		Chronic inhalation local exposure	1.937 mg/m ³	0.215

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., .

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

All relevant information on the safe consumer use has been outlined in the section 2., If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required., www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp

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1. Short title of Exposure Scenario: Use in laboratories

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process category	: PROC15: Use as laboratory reagent
Environmental release category	: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

2.1 Contributing scenario controlling environmental exposure for: ERC4

2.2 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use)	: Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration	: > 480 min
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Human factors not influenced by risk management

Exposed skin area	: Palm of one hand (240 cm ²)
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Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor
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Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent

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exposure to the skin.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC15	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC15	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Use in laboratories

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category	: PROC15: Use as laboratory reagent
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a

2.2 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use)	: Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration	: > 480 min
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Human factors not influenced by risk management

Exposed skin area	: Palm of one hand (240 cm ²)
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Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor
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Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent

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exposure to the skin.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC15	ECETOC TRA modified version		Worker - inhalative, long-term - local	3.858 mg/m ³	0.406
PROC15	ECETOC TRA modified version		Worker - inhalative, short-term - local	7.717 mg/m ³	0.406

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Industrial manufacture of polymers, resins

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU12: Manufacture of plastics products, including compounding and conversion
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
Environmental release category	: ERC6c: Industrial use of monomers for manufacture of thermoplastics

2.1 Contributing scenario controlling environmental exposure for: ERC6c

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2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

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Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.6 Contributing scenario controlling worker exposure for: PROC5

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Product characteristics

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 95 %)

2.7 Contributing scenario controlling worker exposure for: PROC8a**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Both hands (960 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

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Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE.; Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.8 Contributing scenario controlling worker exposure for: PROC8b

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 97 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.9 Contributing scenario controlling worker exposure for: PROC9, PROC14

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

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Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.

(Effectiveness: 95 %)

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002
PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC2	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203
PROC3	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC3	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC4	ECETOC TRA modified version		Worker - inhalative, long-term - local	3.858 mg/m ³	0.406
PROC4	ECETOC TRA modified version		Worker - inhalative, short-term - local	7.717 mg/m ³	0.406
PROC5	ECETOC TRA		Worker -	4.823 mg/m ³	0.508

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	modified version		inhalative, long-term - local		
PROC5	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC8a	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC8b	ECETOC TRA modified version		Worker - inhalative, long-term - local	2.864 mg/m ³	0.305
PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	5.788 mg/m ³	0.305
PROC9, PROC14	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC9, PROC14	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Polymer processing

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
Environmental release category	: ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

2.1 Contributing scenario controlling environmental exposure for: ERC6d

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2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC3

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Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

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2.6 Contributing scenario controlling worker exposure for: PROC5, PROC9, PROC13, PROC14

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.7 Contributing scenario controlling worker exposure for: PROC6, PROC8a

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands (960 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

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Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.8 Contributing scenario controlling worker exposure for: PROC8b

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
 Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 97 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002
PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC2	ECETOC TRA		Worker -	3.858 mg/m ³	0.203

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	modified version		inhalative, short-term - local		
PROC3	ECETOC TRA modified version		Worker - inhalative, long- term - local	4.823 mg/m ³	0.508
PROC3	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC4	ECETOC TRA modified version		Worker - inhalative, long- term - local	3.858 mg/m ³	0.406
PROC4	ECETOC TRA modified version		Worker - inhalative, short-term - local	7.717 mg/m ³	0.406
PROC5, PROC9, PROC13, PROC14	ECETOC TRA modified version		Worker - inhalative, long- term - local	7.717 mg/m ³	0.812
PROC5, PROC9, PROC13, PROC14	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC6, PROC8a	ECETOC TRA modified version		Worker - inhalative, long- term - local	7.717 mg/m ³	0.812
PROC6, PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC8b	ECETOC TRA modified version		Worker - inhalative, long- term - local	2.864 mg/m ³	0.305
PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	5.788 mg/m ³	0.305

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Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Polymer processing

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8c, ERC8d, ERC8f

2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use)	: Liquid, vapour pressure 0.5 - 10 kPa

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Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC8a

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 20%.

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

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Exposed skin area : Both hands (960 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.5 Contributing scenario controlling worker exposure for: PROC8b**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.6 Contributing scenario controlling worker exposure for: PROC14**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 20%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

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Human factors not influenced by risk management

 Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002
PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC2	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC8a	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC8b	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812

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PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC14	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC14	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Use as processing aid

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU5: Manufacture of textiles, leather, fur SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available
Environmental release category	: ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC5: Industrial use resulting in inclusion into or onto a matrix ERC6b: Industrial use of reactive processing aids

2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC4, ERC5, ERC6b

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2.3 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

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Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.5 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.6 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

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Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.7 Contributing scenario controlling worker exposure for: PROC5, PROC9, PROC13, PROC14

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.8 Contributing scenario controlling worker exposure for: PROC6, PROC8a

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Both hands (960 cm²)

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.9 Contributing scenario controlling worker exposure for: PROC7

Product characteristicsConcentration of the Substance in Mixture/Article : 30 %
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa**Frequency and duration of use**

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Two hands and forearms (1500 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.If above technical/organisational control measures are not feasible, then adopt following PPE:, Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 95 %)

2.10 Contributing scenario controlling worker exposure for: PROC8b

Product characteristicsConcentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa**Frequency and duration of use**

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Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 97 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.11 Contributing scenario controlling worker exposure for: PROC10

Product characteristics

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Both hands (960 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 95 %)

2.12 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

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Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.13 Contributing scenario controlling worker exposure for: PROC19

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 2.5%
 Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands and forearms (1980 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source

Workers

Contributing Scenario	Exposure Assessment	Specific conditions	Value type	Level of Exposure	Risk characterisation
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	Method				ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002
PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC2	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203
PROC3	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC3	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC4	ECETOC TRA modified version		Worker - inhalative, long-term - local	3.858 mg/m ³	0.406
PROC4	ECETOC TRA modified version		Worker - inhalative, short-term - local	7.717 mg/m ³	0.406
PROC5, PROC9, PROC13, PROC14	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC5, PROC9, PROC13, PROC14	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC6, PROC8a	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC6, PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC7	ECETOC TRA modified version		Worker - inhalative, long-	7.234 mg/m ³	0.761

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PROC7	ECETOC TRA modified version		term - local Worker - inhalative, short-term - local	14.469 mg/m ³	0.762
PROC8b	ECETOC TRA modified version		Worker - inhalative, long-term - local	2.864 mg/m ³	0.305
PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	5.788 mg/m ³	0.305
PROC10	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC10	ECETOC TRA modified version		Worker - inhalative, short-term - local	9.646 mg/m ³	0.508
PROC15	ECETOC TRA modified version		Worker - inhalative, long-term - local	1.929 mg/m ³	0.203
PROC15	ECETOC TRA modified version		Worker - inhalative, short-term - local	3.858 mg/m ³	0.203
PROC19	ECETOC TRA modified version		Worker - inhalative, long-term - local	2.41 mg/m ³	0.254
PROC19	ECETOC TRA modified version		Worker - inhalative, short-term - local	4.823 mg/m ³	0.254

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Use as processing aid

- | | |
|--------------------------------|---|
| Main User Groups | : SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen) |
| Process category | : PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing
PROC11: Non industrial spraying
PROC13: Treatment of articles by dipping and pouring
PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation
PROC15: Use as laboratory reagent
PROC19: Hand-mixing with intimate contact and only PPE available |
| Environmental release category | : ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix
ERC8d: Wide dispersive outdoor use of processing aids in open systems
ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release
ERC11a: Wide dispersive indoor use of long-life articles and materials with low release |

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2.1 Contributing scenario controlling environmental exposure for: ERC8c, ERC8d, ERC8f, ERC10a, ERC11a

2.2 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

2.3 Contributing scenario controlling worker exposure for: PROC2

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palms of both hands (480 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

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Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.4 Contributing scenario controlling worker exposure for: PROC3

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palm of one hand (240 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.5 Contributing scenario controlling worker exposure for: PROC4

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 40 %.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

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Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.6 Contributing scenario controlling worker exposure for: PROC5

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 20 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.7 Contributing scenario controlling worker exposure for: PROC8a

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 20%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Both hands (960 cm²)

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.8 Contributing scenario controlling worker exposure for: PROC8b

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.9 Contributing scenario controlling worker exposure for: PROC9, PROC13

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 20 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

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Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.10 Contributing scenario controlling worker exposure for: PROC10

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 25 %.

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Both hands (960 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 95 %)

2.11 Contributing scenario controlling worker exposure for: PROC11

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.

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Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Two hands and forearms (1500 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 95 %)Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.12 Contributing scenario controlling worker exposure for: PROC14

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 20%.

Mixture/Article

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374.Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.13 Contributing scenario controlling worker exposure for: PROC15

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Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Palm of one hand (240 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.14 Contributing scenario controlling worker exposure for: PROC19

Product characteristics

Concentration of the Substance in Mixture/Article Covers percentage substance in the product up to 2.5%
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands and forearms (1980 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source

Workers

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Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC1	ECETOC TRA modified version		Worker - inhalative, long-term - local	0.019 mg/m ³	0.002
PROC1	ECETOC TRA modified version		Worker - inhalative, short-term - local	0.039 mg/m ³	0.002
PROC2	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC2	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC3	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC3	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC4	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC4	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC5	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC5	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC8a	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC8a	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC8b	ECETOC TRA		Worker -	7.717 mg/m ³	0.812

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	modified version		inhalative, long-term - local		
PROC8b	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC9, PROC13	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC9, PROC13	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC10	ECETOC TRA modified version		Worker - inhalative, long-term - local	2.411 mg/m ³	0.254
PROC10	ECETOC TRA modified version		Worker - inhalative, short-term - local	4.823 mg/m ³	0.254
PROC11	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC11	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC14	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC14	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC15	ECETOC TRA modified version		Worker - inhalative, long-term - local	3.858 mg/m ³	0.406
PROC15	ECETOC TRA modified version		Worker - inhalative, short-term - local	7.717 mg/m ³	0.406
PROC19	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC19	ECETOC TRA modified version		Worker - inhalative, short-term -	9.646 mg/m ³	0.508

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			local		
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Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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1. Short title of Exposure Scenario: Use as processing aid

Main User Groups	: SU 21: Consumer uses: Private households (= general public = consumers)
Product category	: PC23: Leather tanning, dye, finishing, impregnation and care products PC32: Polymer preparations and compounds PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
Environmental release category	: ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release ERC11a: Wide dispersive indoor use of long-life articles and materials with low release

2.1 Contributing scenario controlling environmental exposure for: ERC8c, ERC8d, ERC8f, ERC10a, ERC11a

2.3 Contributing scenario controlling consumer exposure for: PC23, PC34

Product characteristics

Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 2%.
Physical Form (at time of use)	: Liquid, vapour pressure 0.5 - 10 kPa

Amount used

Applied amount	: 0.75 g/s
Uptake fraction	: 100 %

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Frequency and duration of use

Exposure duration : 240 min
Frequency of use : 2 days/week
Application duration : 3 min

Human factors not influenced by risk management

Body weight : 65 kg
Breathing volume : 1.446 m³/h

Other given operational conditions affecting consumers exposure

Room size : 58 m³
Ventilation rate per hour : 0.5

2.4 Contributing scenario controlling consumer exposure for: PC32

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 2%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Amount used

Applied amount : 0.025 l
Uptake fraction : 100 %

Frequency and duration of use

Exposure duration : 240 min
Frequency of use : 104 days/year
Application duration : 20 min

Human factors not influenced by risk management

Body weight : 65 kg
Breathing volume : 34.7 m³/day

Other given operational conditions affecting consumers exposure

Room size : 58 m³
Ventilation rate per hour : 0.5

3. Exposure estimation and reference to its source

Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	RCR
PC23 PC34	Consexpo		Acute inhalation local exposure	0.04 mg/m ³	0.0004
PC23 PC34	Consexpo		Chronic inhalation local exposure	0.09 mg/m ³	0.005
PC32	Consexpo		Acute inhalation local exposure	0.6 mg/m ³	0.063
PC32	Consexpo		Chronic inhalation local exposure	3.7 mg/m ³	0.195

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1., .

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

All relevant information on the safe consumer use has been outlined in the section 2., If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required., www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp

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1. Short title of Exposure Scenario: Animal nutrition

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category	: PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b

2.2 Contributing scenario controlling worker exposure for: PROC5

Product characteristics

Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 % (unless stated differently).
Physical Form (at time of use)	: Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration	: > 480 min
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Human factors not influenced by risk management

Exposed skin area	: Palms of both hands (480 cm ²)
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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.3 Contributing scenario controlling worker exposure for: PROC10**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Both hands (960 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 95 %)

2.4 Contributing scenario controlling worker exposure for: PROC11**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 10%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

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Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Two hands and forearms (1500 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.5 Contributing scenario controlling worker exposure for: PROC13**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

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2.6 Contributing scenario controlling worker exposure for: PROC19
Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 5%.
 Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

Exposed skin area : Both hands and forearms (1980 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC5	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC5	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC10	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC10	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC11	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC11	ECETOC TRA modified version		Worker - inhalative,	9.646 mg/m ³	0.508

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			short-term - local		
PROC13	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC13	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC19	ECETOC TRA modified version		Worker - inhalative, long-term - local	6.752 mg/m ³	0.711
PROC19	ECETOC TRA modified version		Worker - inhalative, short-term - local	13.504 mg/m ³	0.711

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

Ref. 2.9/GB/EN

FennoSpec 7810T

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1. Short title of Exposure Scenario: Use as preserving agent

Main User Groups	: SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process category	: PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available
Environmental release category	: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b

2.2 Contributing scenario controlling worker exposure for: PROC5

Product characteristics

Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 % (unless stated differently).
Physical Form (at time of use)	: Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration	: > 480 min
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Human factors not influenced by risk management

Exposed skin area	: Palms of both hands (480 cm ²)
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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 80 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

2.3 Contributing scenario controlling worker exposure for: PROC10

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Both hands (960 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:., Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness: 95 %)

2.4 Contributing scenario controlling worker exposure for: PROC11

Product characteristics

Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 10%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Ref. 2.9/GB/EN

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Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Two hands and forearms (1500 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:, Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

2.5 Contributing scenario controlling worker exposure for: PROC13**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 80%.
Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk managementExposed skin area : Palms of both hands (480 cm²)**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

Technical conditions and measures

Local exhaust ventilation (Effectiveness: 95 %)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin. If above technical/organisational control measures are not feasible, then adopt following PPE:, Wear a full face respirator conforming to EN140 with Type A filter or better.
(Effectiveness: 95 %)

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2.6 Contributing scenario controlling worker exposure for: PROC19
Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 5%.

Physical Form (at time of use) : Liquid, vapour pressure 0.5 - 10 kPa

Frequency and duration of use

Exposure duration : > 480 min

Human factors not influenced by risk management

 Exposed skin area : Both hands and forearms (1980 cm²)

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374. Use suitable eye protection., Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source
Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterisation ratio (PEC/PNEC):
PROC5	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC5	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC10	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC10	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC11	ECETOC TRA modified version		Worker - inhalative, long-term - local	4.823 mg/m ³	0.508
PROC11	ECETOC TRA modified version		Worker - inhalative,	9.646 mg/m ³	0.508

FennoSpec 7810T

Ref. 2.9/GB/EN

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			short-term - local		
PROC13	ECETOC TRA modified version		Worker - inhalative, long-term - local	7.717 mg/m ³	0.812
PROC13	ECETOC TRA modified version		Worker - inhalative, short-term - local	15.433 mg/m ³	0.812
PROC19	ECETOC TRA modified version		Worker - inhalative, long-term - local	6.752 mg/m ³	0.711
PROC19	ECETOC TRA modified version		Worker - inhalative, short-term - local	13.504 mg/m ³	0.711

Environmental exposure assessment for this scenario is not relevant., This substance is corrosive. For the handling of corrosive substances and formulations, immediate dermal contacts occur only occasionally and it is assumed that repeated daily dermal exposure can be neglected. Therefore, dermal exposure to this substance was not quantified., The concentration of the substance has been considered using a linear approach., When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., For scaling see: <http://www.ecetoc.org/tra>, If scaling reveals a condition of unsafe use (i.e. RCRs>1), additional RMMs or a site-specific chemical safety assessment is required.

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According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : RezosoTM 6250 RELEASE AGENT
TM Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Release agent

<p>1.3 Details of the supplier of the safety data sheet Solenis Netherlands B.V. De Corridor 4 3621 ZB Breukelen Netherlands</p> <p>Solenis UK Industries Limited P. O. Box 38, Cleckheaton Rd, Low Moor, Bradford, BD12 0JZ, United Kingdom</p> <p>E-mail address of person responsible for the SDS: EHSProductSafetyTeam@solenis.com</p> <p>Product Information Contact your local Solenis representative</p>	<p>1.4 Emergency telephone number +1-302-502-0991 , or contact your local emergency telephone number at 112</p>
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Serious eye damage, Category 1

H318: Causes serious eye damage.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms :



Signal word : Danger

Hazard statements : H318 Causes serious eye damage.

Precautionary statements : **Prevention:**
P280 Wear eye protection/ face protection.

Response:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

Hazardous components which must be listed on the label:
POLYOXYETHYLENE TRIMETHYLDECYL ALCOHOL 7- 10
Isotridecanol, ethoxylated (unspecified)

Additional Labelling

EUH208 Contains mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);. May produce an allergic reaction.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
POLYOXYETHYLENE TRIMETHYLDECYL ALCOHOL 7- 10	69011-36-5	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 3 - < 5

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Isotridecanol, ethoxylated (unspecified)	69011-36-5	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 2,5 - < 3
mixture of: 5-chloro-2- methyl-4-isothiazolin-3- one [EC no.247- 500-7] and 2-methyl-2H- isothiazol-3-one [EC no. 220-239-6] (3:1);	55965-84-9	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 2; H310 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH071 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100 specific concentration limit Skin Corr. 1C; H314 >= 0,6 % Skin Irrit. 2; H315 0,06 - < 0,6 % Eye Irrit. 2; H319 0,06 - < 0,6 % Skin Sens. 1A; H317 >= 0,0015 % Eye Dam. 1; H318 >= 0,6 %	>= 0,0002 - < 0,0015

For explanation of abbreviations see section 16.

SECTION 4: First aid measures
4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical
advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is
recommended that exposed areas be cleaned by washing
with soap and water.

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In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.

If swallowed : Obtain medical attention.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)

Risks : Causes serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures

5.1 Extinguishing media


Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion : Carbon monoxide

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products Carbon dioxide (CO₂)

5.3 Advice for firefighters

- Special protective equipment : In the event of fire, wear self-contained breathing apparatus for firefighters
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.


6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Do not breathe vapours/dust.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against : Normal measures for preventive fire protection.

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fire and explosion

Hygiene measures : Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Recommended storage temperature : 5 - 35 °C

Further information on storage stability : Do not freeze.

No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.


Personal protective equipment

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes

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Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear resistant gloves (consult your safety equipment supplier).

Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : brown

Odour : slight

Odour Threshold : No data available

pH : 8,5 - 10,5 (23 °C)
Concentration: 5 %

Melting point/freezing point : No data available

Boiling point/boiling range : No data available

Flash point : > 100 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

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Density : No data available

Solubility(ies)
 Water solubility : dispersible (23 °C)

Solubility in other solvents : No data available

Partition coefficient: n-
 octanol/water : No data available

Decomposition temperature : No data available

Viscosity
 Viscosity, dynamic : 500 mPa.s (25 °C)

Viscosity, kinematic : No data available

Oxidizing properties : No data available

9.2 Other information

Self-ignition : No data available

SECTION 10: Stability and reactivity
10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid


Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Acids
 Bases
 halogens
 Oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon monoxide
 Carbon dioxide (CO₂)

 Strong bonds. Trusted solutions.		Page: 9
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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Components:

POLYOXYETHYLENE TRIMETHYLDECYL ALCOHOL 7- 10:

Acute oral toxicity : LD50 (Rat): 500 - 2.000 mg/kg

Isotridecanol, ethoxylated (unspecified):

Acute oral toxicity : Assessment: The component/mixture is classified as acute oral toxicity, category 4.

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Acute oral toxicity : LD50 (Rat): > 66 mg/kg

Acute inhalation toxicity : LC 50 (Rat): 0,33 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Remarks: Aerosol

Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): 141 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

POLYOXYETHYLENE TRIMETHYLDECYL ALCOHOL 7- 10:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Not irritating to skin

Isotridecanol, ethoxylated (unspecified):

Species : Rabbit
Method : OECD Test Guideline 404
Result : Not irritating to skin

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Species : Rabbit
Result : Corrosive to skin

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Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:**POLYOXYETHYLENE TRIMETHYLDECYL ALCOHOL 7- 10:**Species : Rabbit
Result : Corrosive to eyes**Isotridecanol, ethoxylated (unspecified):**Species : Rabbit
Method : OECD Test Guideline 405
Result : Corrosive to eyes**mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:**Species : Rabbit
Result : Corrosive to eyes**Respiratory or skin sensitisation****Skin sensitisation**

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:**mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:**

Result : Probability or evidence of high skin sensitisation rate in humans

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

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Aspiration toxicity

Not classified based on available information.

Further information**Product:**

Remarks : No data available

SECTION 12: Ecological information**12.1 Toxicity****Product:**

Toxicity to fish : LC50 : 10 - 100 mg/l

Toxicity to microorganisms : EC50 : 10 - 100 mg/l

Components:**POLYOXYETHYLENE TRIMETHYLDECYL ALCOHOL 7- 10:**Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 1 - 10 mg/l
Exposure time: 96 hToxicity to daphnia and other : EC50 (Aquatic invertebrates): > 1 - 10 mg/l
aquatic invertebrates Exposure time: 48 hToxicity to algae/aquatic : EC50 (Aquatic plants): > 1 - 10 mg/l
plants Exposure time: 72 hToxicity to microorganisms : EC10 : > 10.000 mg/l
Exposure time: 17 h
Method: DIN 38 412 Part 8**Isotridecanol, ethoxylated (unspecified):**Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 10 - 100 mg/l
Exposure time: 96 hToxicity to daphnia and other : EC50 (Aquatic invertebrates): > 10 - 100 mg/l
aquatic invertebrates Exposure time: 48 hToxicity to algae/aquatic : EC50 (Aquatic plants): > 10 - 100 mg/l
plants Exposure time: 72 hToxicity to microorganisms : EC10 (activated sludge): > 10.000 mg/l
Exposure time: 17 h
Method: DIN 38 412 Part 8

**mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-
 isothiazol-3-one [EC no. 220-239-6] (3:1);:**

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Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,19 mg/l Exposure time: 96 h
		LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,28 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,16 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,027 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	100
Toxicity to microorganisms	:	EC50 (activated sludge): 4,5 mg/l Test Type: Respiration inhibition
M-Factor (Chronic aquatic toxicity)	:	100

12.2 Persistence and degradability**Product:**

Biodegradability : Remarks: Not readily biodegradable.

Components:**POLYOXYETHYLENE TRIMETHYLDECYL ALCOHOL 7- 10:**

Biodegradability : Biodegradation: >= 90 %
Method: OECD Test Guideline 301E

Result: Readily biodegradable.
 Biodegradation: > 60 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301B
 Remarks: The surfactant(s) contained in this mixture complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

Isotridecanol, ethoxylated (unspecified):

Biodegradability : Result: Readily biodegradable.
 Biodegradation: > 60 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301B

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mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Biodegradability : Biodegradation: 30 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301B
 Remarks: Not readily biodegradable.

12.3 Bioaccumulative potential**Components:****POLYOXYETHYLENE TRIMETHYLDECYL ALCOHOL 7- 10:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1);:

Partition coefficient: n- : log Pow: <= 0,71
 octanol/water Method: OECD Test Guideline 117

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment**Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects**Product:**

Additional ecological : An environmental hazard cannot be excluded in the event of
 information unprofessional handling or disposal.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

Product : The product should not be allowed to enter drains, water courses or the soil.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.

Dispose of in accordance with local regulations.

Contaminated packaging : Empty remaining contents.

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Dispose of as unused product.
Empty containers should be taken to an approved waste
handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: Transport information**14.1 UN number or ID number****ADR:** Not dangerous goods**ADN:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.2 UN proper shipping name****ADR:** Not dangerous goods**ADN:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.3 Transport hazard class(es)****ADR:** Not dangerous goods**ADN:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.4 Packing group****ADR:** Not dangerous goods**ADN:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.5 Environmental hazards****ADR:** Not applicable**ADN:** Not applicable**RID:** Not applicable**IMDG-Code:** Not applicable**IATA-DGR:** Not applicable

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14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

UK REACH List of substances subject to authorisation (Annex XIV) : Not applicable

UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation : Not applicable

The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) : Not applicable

GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation : Not applicable

Control of Major Accident Hazards Regulations 2015 (COMAH) : Not applicable


The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

AIIC : On the inventory, or in compliance with the inventory

DSL : All components of this product are on the Canadian DSL

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ENCS : Not in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Further information

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Classification of the mixture:

Eye Dam. 1 H318

Classification procedure:

Calculation method

Full text of H-Statements

H301 : Toxic if swallowed.

H302 : Harmful if swallowed.

H310 : Fatal in contact with skin.

H314 : Causes severe skin burns and eye damage.

H317 : May cause an allergic skin reaction.

H318 : Causes serious eye damage.

H330 : Fatal if inhaled.

H400 : Very toxic to aquatic life.

H410 : Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Acute : Short-term (acute) aquatic hazard


Aquatic Chronic : Long-term (chronic) aquatic hazard

Eye Dam. : Serious eye damage

Skin Corr. : Skin corrosion

Skin Sens. : Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA -

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International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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Conforms to EU Regulation 1907/2006/EC as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Rezsol™ 4119
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1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Production aid for use in the pulp & paper industry

<p>1.3 Details of the supplier of the safety data sheet Solenis Pesetastraat 62 2991 XT Barendrecht Netherlands</p> <p>EHSProductSafetyTeam@solenis.com</p>	<p>1.4 Emergency telephone number +1-302-502-0991 , or contact your local emergency telephone number at 112</p> <p>Product Information Contact your local Solenis representative</p>
--	--

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.


2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

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Remarks : No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : No hazards which require special first aid measures.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : No symptoms known or expected.


4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet

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5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO₂)
silicon dioxide
trace amounts of incompletely burned carbon products

5.3 Advice for firefighters

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

- Environmental precautions : Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.


6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.

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Hygiene measures : Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Discard gloves that show tears, pinholes, or signs of wear.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : viscous

Colour : amber

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- Odour : odourless
- Odour Threshold : No data available
- pH : Not applicable
- Melting point/freezing point : < 0 °C
- Boiling point/boiling range : > 200 °C
- Flash point : 215 °C
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : No data available
- Relative vapour density : No data available
- Relative density : No data available
- Density : ca. 0,9 g/cm³
- Solubility(ies)
 - Water solubility : dispersible
 - Solubility in other solvents : No data available
- Partition coefficient: n-octanol/water : log Pow: > 3
- Decomposition temperature : No data available
- Viscosity
 - Viscosity, dynamic : < 1.000 mPa.s
 - Viscosity, kinematic : No data available
- Oxidizing properties : No data available

9.2 Other information

- Self-ignition : No data available

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SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid

Conditions to avoid : excessive heat

10.5 Incompatible materials

Materials to avoid : strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Silicon oxides
Hydrocarbons

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : LD 50 (Rat): > 2.000 mg/kg

Acute dermal toxicity : LD 50 (Rat): Expected > 2.000 mg/kg

Skin corrosion/irritation


Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

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Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC 50 (Fish): > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates : EC 50 (Aquatic invertebrates): Expected > 100 mg/l


Toxicity to microorganisms : EC10 (Bacteria): > 100 mg/l

12.2 Persistence and degradability

Product:

Biodegradability : Biodegradation: > 70 %
 Exposure time: 28 d
 Remarks: Readily biodegradable

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
 ca. 100 g/l

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Incubation time: 5 d

Chemical Oxygen Demand (COD) : ca. 1.000 g/l

BOD/COD : BOD/COD: 10 %

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: The substance has high potential for bioaccumulation.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13: Disposal considerations


13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

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ADR: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.2 UN proper shipping name

ADR: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.3 Transport hazard class(es)

ADR: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.4 Packing group

ADR: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.5 Environmental hazards

ADR: Not applicable

RID: Not applicable

IMDG-Code: Not applicable

IATA-DGR: Not applicable

14.6 Special precautions for user


The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet.

Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable


Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AICS : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

No data available

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SECTION 16: Other information

Further information

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Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is

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not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

GB / EN

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Conforms to EU Regulation 1907/2006/EC as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : ReNew™ SC7361 cleaning agent
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Production aid for use in the pulp & paper industry


<p>1.3 Details of the supplier of the safety data sheet Solenis Pesetastraat 62 2991 XT Barendrecht Netherlands</p> <p>Solenis UK Industries Limited P. O. Box 38, Cleckheaton Rd, Low Moor, Bradford, BD12 0JZ, United Kingdom</p> <p>E-mail address of person responsible for the SDS: EHSPRODUCTSAFETYTEAM@solenis.com</p> <p>Product Information Contact your local Solenis representative</p>	<p>1.4 Emergency telephone number +1-302-502-0991 , or contact your local emergency telephone number at 112</p>
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Skin corrosion, Sub-category 1A	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P390 Absorb spillage to prevent material damage.

Hazardous components which must be listed on the label:

sodium hydroxide


tetrasodium ethylene diamine tetraacetate

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components


Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
sodium hydroxide	1310-73-2 215-185-5 01-2119457892-27- xxxx	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318 specific concentration limit Skin Corr. 1A; H314 ≥ 5 % Skin Corr. 1B; H314 2 - < 5 % Skin Irrit. 2; H315 0,5 - < 2 % Eye Irrit. 2; H319 0,5 - < 2 %	≥ 25 - < 40
tetrasodium ethylene diamine tetraacetate	64-02-8 200-573-9 01-2119486762-27- xxxx	Acute Tox. 4; H302 Acute Tox. 4; H332 Eye Dam. 1; H318 STOT RE 2; H373 (Respiratory Tract)	≥ 1 - < 2,5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.

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- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
- Risks : Causes serious eye damage.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : No hazards which require special first aid measures.


SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot

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lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : corrosive vapors
Sodium oxides
toxic fumes
Carbon monoxide
Carbon dioxide (CO₂)
Ammonia
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions


Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Wash hands before breaks and at the end of workday. When using do not eat or drink. Ensure that eyewash stations and safety showers are close to the workstation location. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)


Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
sodium hydroxide	1310-73-2	STEL	2 mg/m ³	GB EH40

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Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
sodium hydroxide	Workers	Inhalation	Long-term local effects	1 mg/m3
Remarks:	respiratory tract irritation			
	General population	Inhalation	Long-term local effects	1 mg/m3
Remarks:	respiratory tract irritation			

8.2 Exposure controls

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Hand protection


Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid
Colour : clear, yellow-orange, brown
Odour : mild
Odour Threshold : No data available

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Melting point/freezing point : ca. -16 °C
 Boiling point/boiling range : ca. 100 °C
 Flammability : No data available
 Upper explosion limit / Upper flammability limit : No data available
 Lower explosion limit / Lower flammability limit : No data available
 Flash point : > 100 °C
 Decomposition temperature : No data available
 pH : 12 - 14
 1% Aqueous solution
 Viscosity
 Viscosity, dynamic : 120 mPa.s (21 °C)
 Viscosity, kinematic : No data available
 Solubility(ies)
 Water solubility : completely soluble
 Solubility in other solvents : No data available
 Partition coefficient: n-octanol/water : No data available
 Vapour pressure : 24 hPa
 Relative density : No data available
 Density : 1,290 - 1,330 g/cm³ (25 °C)
 Relative vapour density : similar to water
 Particle characteristics
 Assessment : No data available
 Particle size : No data available
 Particle Size Distribution : No data available
 Dustiness : No data available

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Shape : No data available

Crystallinity : No data available

Surface treatment /Coatings : No data available

9.2 Other information

Oxidizing properties : No data available

Self-ignition : No data available

Evaporation rate : < 1
n-Butyl Acetate

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid


Conditions to avoid : Exposure to sunlight.
Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid : Acids
aluminum
Copper
Copper alloys
halogenated hydrocarbons
Metals
Nickel
organic nitro compounds
Oxidizing agents
reactive metals such as aluminum and magnesium
steel
Zinc

10.6 Hazardous decomposition products

Hazardous decomposition : corrosive vapors

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products

Sodium oxides
toxic fumes
Carbon monoxide
Carbon dioxide (CO₂)
Ammonia
Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified based on available information.

Product:

Acute dermal toxicity : LD50 (Rabbit): Expected > 5.000 mg/kg

Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

tetrasodium ethylene diamine tetraacetate:

Acute oral toxicity : LD50 (Rat, female): 1.780 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 1 - 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:


Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:

sodium hydroxide:

Result : Causes severe burns.

tetrasodium ethylene diamine tetraacetate:

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Species : Rabbit
 Result : Not irritating to skin

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:

sodium hydroxide:

Result : Corrosive to eyes

tetrasodium ethylene diamine tetraacetate:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

tetrasodium ethylene diamine tetraacetate:

Test Type : Maximisation Test
 Species : Guinea pig
 Method : OECD Test Guideline 406
 Remarks : Information given is based on data obtained from similar substances.

Germ cell mutagenicity

Not classified based on available information.


Components:

tetrasodium ethylene diamine tetraacetate:

Genotoxicity in vitro : Test Type: Ames test
 Test system: Salmonella typhimurium
 Metabolic activation: with and without metabolic activation
 Result: negative

Carcinogenicity

Not classified based on available information.

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Components:

tetrasodium ethylene diamine tetraacetate:

Result : negative
Remarks : Expert judgement
see user defined free text

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Components:

tetrasodium ethylene diamine tetraacetate:

Exposure routes : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties


Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No data available

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SECTION 12: Ecological information

12.1 Toxicity

Product:

- Toxicity to fish : LC50 (Fish): Expected > 100 mg/l
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Aquatic invertebrates): Expected > 100 mg/l


Components:

sodium hydroxide:

- Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34,59 - 47,13 mg/l
Exposure time: 48 h
Remarks: Intoxication

tetrasodium ethylene diamine tetraacetate:

- Toxicity to fish : LC50 (Lepomis macrochirus): > 100 mg/l
Exposure time: 96 h
Remarks: Based on a similar product formulation.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 140 mg/l
Exposure time: 48 h
Remarks: Information given is based on data obtained from similar substances.
- Toxicity to algae/aquatic plants : EC50 (Scenedesmus capricornutum (fresh water algae)): > 100 mg/l
Exposure time: 72 h
Method: Directive 67/548/EEC, Annex V, C.3.
Remarks: Based on a similar product formulation.
- Toxicity to microorganisms : EC50 (activated sludge): 500 mg/l
Exposure time: 0,5 h
Remarks: Based on a similar product formulation.
- Toxicity to fish (Chronic toxicity) : NOEC: >= 36,9 mg/l
Exposure time: 35 d
Species: Danio rerio
Method: OECD Test Guideline 210
Remarks: Based on similar product.

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 25 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Remarks: Information given is based on data obtained from similar substances.

12.2 Persistence and degradability

Product:

Biodegradability : Biodegradation: < 70 %
Exposure time: 28 d
Remarks: Not readily biodegradable.

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
5 mg/g
Incubation time: 5 d

: Biochemical oxygen demand
6 mg/g
Incubation time: 28 d

Chemical Oxygen Demand (COD) : 50 mg/g

Components:

sodium hydroxide:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

tetrasodium ethylene diamine tetraacetate:


Biodegradability : Result: Not readily biodegradable.
Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301E

Biodegradation: 90 - 100 %
Exposure time: 72 d
Method: OECD Test Guideline 301E

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: The bioaccumulation potential cannot be determined.

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Components:

tetrasodium ethylene diamine tetraacetate:

Partition coefficient: n- : log Pow: < 3
octanol/water

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with local regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

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SECTION 14: Transport information**14.1 UN number or ID number****ADR:** UN1824**ADN:** UN1824**RID:** UN1824**IMDG-Code:** UN1824**IATA-DGR:** UN1824**14.2 UN proper shipping name****ADR:** SODIUM HYDROXIDE SOLUTION**ADN:** SODIUM HYDROXIDE SOLUTION**RID:** SODIUM HYDROXIDE SOLUTION**IMDG-Code:** SODIUM HYDROXIDE SOLUTION**IATA-DGR:** Sodium hydroxide solution**14.3 Transport hazard class(es)****ADR:** 8**ADN:** 8**RID:** 8**IMDG-Code:** 8**IATA-DGR:** 8**14.4 Packing group****ADR:** II**ADN:** II**RID:** II**IMDG-Code:** II**IATA-DGR:** II**14.5 Environmental hazards****ADR:** Not applicable**ADN:** Not applicable**RID:** Not applicable**IMDG-Code:** Not applicable**IATA-DGR:** Not applicable**14.6 Special precautions for user**

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The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.


SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	: Conditions of restriction for the following entries should be considered: Number on list 3
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	: Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	: Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	: Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	: Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	: Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	Not applicable

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Further information

Revision Date: 24.07.2023

Classification of the mixture:

Met. Corr. 1 H290
 Skin Corr. 1A H314
 Eye Dam. 1 H318

Classification procedure:


Calculation method
 Calculation method
 Calculation method

Full text of H-Statements

H290 : May be corrosive to metals.
 H302 : Harmful if swallowed.
 H314 : Causes severe skin burns and eye damage.
 H318 : Causes serious eye damage.
 H332 : Harmful if inhaled.
 H373 : May cause damage to organs through prolonged or repeated exposure if inhaled.

Full text of other abbreviations

Acute Tox. : Acute toxicity
 Eye Dam. : Serious eye damage
 Met. Corr. : Corrosive to metals
 Skin Corr. : Skin corrosion
 STOT RE : Specific target organ toxicity - repeated exposure
 GB EH40 : UK. EH40 WEL - Workplace Exposure Limits
 GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

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ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data


SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Praestafix™ DC5030 Fixing Agent
 ™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Fixing agents

<p>1.3 Details of the supplier of the safety data sheet Solenis De Corridor 4 3621 ZB Breukelen Netherlands</p> <p>Solenis UK Industries Limited P. O. Box 38, Cleckheaton Rd, Low Moor, Bradford, BD12 0JZ, United Kingdom</p> <p>E-mail address of person responsible for the SDS: EHSProductSafetyTeam@solenis.com</p> <p>Product Information Contact your local Solenis representative</p>	<p>1.4 Emergency telephone number +1-302-502-0991 , or contact your local emergency telephone number at 112</p>
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Long-term (chronic) aquatic hazard,
 Category 3

H412: Harmful to aquatic life with long lasting effects.

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2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard statements : H412 Harmful to aquatic life with long lasting effects.

 Precautionary statements : **Prevention:**
 P273 Avoid release to the environment.
Disposal:
 P501 Dispose of contents/ container to an approved waste disposal plant.
2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Material can create slippery conditions.

SECTION 3: Composition/information on ingredients
3.2 Mixtures**Components**

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
DIMETHYLAMINE, POLYMER WITH EPICHLOROHYDRIN AND N- METHYLMETHANAMI NE	42751-79-1	Aquatic Chronic 3; H412	>= 40 - < 50

For explanation of abbreviations see section 16.

SECTION 4: First aid measures
4.1 Description of first aid measures

General advice : No hazards which require special first aid measures.

 If inhaled : If breathed in, move person into fresh air.
 If unconscious, place in recovery position and seek medical advice.

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If symptoms persist, call a physician.

- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses. Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Water spray
 Foam
 Carbon dioxide (CO₂)
 Dry chemical

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon monoxide
 Carbon dioxide (CO₂)
 nitrogen oxides (NO_x)

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Material can create slippery conditions.
 Water may cause extremely slippery conditions.
 Fire residues and contaminated fire extinguishing water must

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be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Material can create slippery conditions.
 Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
 Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
 Prevent further leakage or spillage if safe to do so.
 If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : For small spills, quickly contain and remove the spilled material using absorbent pads, socks, kitty litter, sawdust etc, then appropriately dispose. Do not leave absorbents to sit overnight, as they will become hard and difficult to remove.
 The remaining residue or film can be treated with dilute caustic (2%) or dilute liquid bleach (2–5%), allowed to soak for up to one hour, and clean with warm water (between 49C – 54C (120F – 130 F)) or flushed to a sewer using high volumes of water taking into account local guidelines.
 Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid spillage on floor as the product can become very slippery.
 Smoking, eating and drinking should be prohibited in the application area.
 For personal protection see section 8.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage : Containers which are opened must be carefully resealed and

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areas and containers : kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : No materials to be especially mentioned.

Recommended storage temperature : 5 - 30 °C

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection
8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Engineering measures

General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
 Safety shoes
 Wear resistant gloves (consult your safety equipment supplier).

Respiratory protection : No personal respiratory protective equipment normally required.

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties

Appearance : liquid

Colour : clear, to, yellow, amber

Odour : No data available

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Odour Threshold	:	No data available
pH	:	4 - 7 (25 °C)
Melting point/freezing point	:	-3 °C
Boiling point/boiling range	:	100 °C
Flash point	:	does not flash
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	1,14 (25 °C)
Density	:	No data available
Solubility(ies)		
Water solubility	:	completely miscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	650 - 1.000 mPa.s (25 °C) Method: Brookfield
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available

9.2 Other information

Particle size	:	No data available
Particle Size Distribution	:	No data available

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Self-ignition : No data available

SECTION 10: Stability and reactivity**10.1 Reactivity**

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid

Conditions to avoid : Keep away from heat, flame, sparks and other ignition sources.
Freezing temperatures.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

strong mineral acids
Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Not classified based on available information.

Components:**DIMETHYLAMINE, POLYMER WITH EPICHLOROHYDRIN AND N-METHYLMETHANAMINE:**

Acute oral toxicity : LD₅₀ (Rat): 6.160 mg/kg

Acute dermal toxicity : LD₅₀ (Rabbit): > 10.000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

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Components:**DIMETHYLAMINE, POLYMER WITH EPICHLOROHYDRIN AND N-METHYLMETHANAMINE:**

Result : Possibly irritating to skin

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:**DIMETHYLAMINE, POLYMER WITH EPICHLOROHYDRIN AND N-METHYLMETHANAMINE:**

Result : Possibly irritating to eyes

Remarks : Unlikely to cause eye irritation or injury.
Product dust may be irritating to eyes, skin and respiratory system.**Respiratory or skin sensitisation****Skin sensitisation**

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information**Product:**

Remarks : No data available

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SECTION 12: Ecological information**12.1 Toxicity****Components:****DIMETHYLAMINE, POLYMER WITH EPICHLOROHYDRIN AND N-METHYLMETHANAMINE:**

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 10 - 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: In natural waters, aquatic toxicity is markedly reduced, due to neutralisation of cationic charge by adsorption to particles, hydrolysis and dissolved organic carbon.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10 - 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : IC50 (Pseudokirchneriella subcapitata (green algae)): > 10 - 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Information given is based on data obtained from similar substances.

12.2 Persistence and degradability**Components:****DIMETHYLAMINE, POLYMER WITH EPICHLOROHYDRIN AND N-METHYLMETHANAMINE:**

Biodegradability : Result: Not readily biodegradable.
Biodegradation: < 70 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Information given is based on data obtained from similar substances.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment**Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of

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0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Components:

DIMETHYLAMINE, POLYMER WITH EPICHLOROHYDRIN AND N-METHYLMETHANAMINE:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Product : Dispose of in accordance with local regulations.
 The product should not be allowed to enter drains, water courses or the soil.
- Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

ADR: Not dangerous goods

ADN: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.2 UN proper shipping name

ADR: Not dangerous goods

ADN: Not dangerous goods

RID: Not dangerous goods

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IMDG-Code: Not dangerous goods
IATA-DGR: Not dangerous goods

14.3 Transport hazard class(es)

ADR: Not dangerous goods
ADN: Not dangerous goods
RID: Not dangerous goods
IMDG-Code: Not dangerous goods
IATA-DGR: Not dangerous goods

14.4 Packing group

ADR: Not dangerous goods
ADN: Not dangerous goods
RID: Not dangerous goods
IMDG-Code: Not dangerous goods
IATA-DGR: Not dangerous goods

14.5 Environmental hazards

ADR: Not applicable
ADN: Not applicable
RID: Not applicable
IMDG-Code: Not applicable
IATA-DGR: Not applicable

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

- UK REACH List of restrictions (Annex 17) : Not applicable
- Regulation (EC) No 1005/2009 on substances that : Not applicable

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deplete the ozone layer

UK REACH List of substances subject to authorisation (Annex XIV) : Not applicable

UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation : Not applicable

The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) : Not applicable

GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation : Not applicable

Control of Major Accident Hazards Regulations 2015 (COMAH) : Not applicable

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
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- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Further information

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Classification of the mixture:

Aquatic Chronic 3 H412

Classification procedure:

Calculation method

Full text of H-Statements

H412 : Harmful to aquatic life with long lasting effects.

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Full text of other abbreviations

Aquatic Chronic : Long-term (chronic) aquatic hazard

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Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

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SAFETY DATA SHEET

Revision Date: 21.03.2024

Print Date: 27.01.2025


SDS Number: 000000284824

Version: 1.0

Praestafix™ DC5030 Fixing Agent
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries
893141

other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

GB / EN

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	Print Date: 03.05.2024
	SDS Number: 00000249700
PerForm™ PA45 Retention/Drainage/Clarification Aid ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 850007	Version: 2.1

Conforms to EU Regulation 1907/2006/EC as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : PerForm™ PA45 Retention/Drainage/Clarification Aid
 ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Retention, drainage and clarification aid for use in the pulp & paper industry


<p>1.3 Details of the supplier of the safety data sheet Solenis Pesetastraat 62 2991 XT Barendrecht Netherlands</p> <p>Solenis UK Industries Limited P. O. Box 38, Cleckheaton Rd, Low Moor, Bradford, BD12 0JZ, United Kingdom</p> <p>E-mail address of person responsible for the SDS: EHSPRODUCTSAFETYTEAM@solenis.com</p> <p>Product Information Contact your local Solenis representative</p>	<p>1.4 Emergency telephone number +1-302-502-0991 , or contact your local emergency telephone number at 112</p>
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Material can create slippery conditions.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Remarks : No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures


General advice : No hazards which require special first aid measures.

If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

In case of eye contact : Remove contact lenses.
Protect unharmed eye.

If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.

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If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Water spray
 Foam

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
 Hazardous combustion products : Carbon monoxide
 Carbon dioxide (CO₂)
 Nitrogen oxides (NO_x)


5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
 Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
 Further information : Material can create slippery conditions.
 Water may cause extremely slippery conditions.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Material can create slippery conditions.
 Avoid dust formation.
 Avoid breathing dust.
 Persons not wearing protective equipment should be excluded

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from area of spill until clean-up has been completed.
 Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

Environmental precautions : Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : For small spills, quickly contain and remove the spilled material using absorbent pads, socks, kitty litter, sawdust etc, then appropriately dispose. Do not leave absorbents to sit overnight, as they will become hard and difficult to remove. The remaining residue or film can be treated with dilute caustic (2%) or dilute liquid bleach (2–5%), allowed to soak for up to one hour, and clean with warm water (between 49C – 54C (120F – 130 F)) or flushed to a sewer using high volumes of water taking into account local guidelines. Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.


SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Avoid spillage on floor as the product can become very slippery.
 Avoid dust formation.
 Smoking, eating and drinking should be prohibited in the application area.
 For personal protection see section 8.
- Advice on protection against fire and explosion : Take measures to prevent the build up of electrostatic charge.
 Provide appropriate exhaust ventilation at places where dust is formed.
- Hygiene measures : Avoid breathing dust.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : No smoking. Electrical installations / working materials must comply with the technological safety standards.
- Advice on common storage : No materials to be especially mentioned.
- Further information on storage stability : Keep in a dry place.
 No decomposition if stored and applied as directed.

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7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Provide appropriate exhaust ventilation at places where dust is formed. General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Eye protection : Safety glasses

Hand protection
Material : Nitrile rubber

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).

Respiratory protection : No personal respiratory protective equipment normally required.


SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : powder

Colour : off-white


Odour : No data available

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Odour Threshold : No data available
 Melting point/freezing point : No data available
 Boiling point/boiling range : No data available
 Flammability : No data available
 Upper explosion limit / Upper flammability limit : No data available
 Lower explosion limit / Lower flammability limit : No data available
 Flash point : No data available
 Decomposition temperature : No data available
 pH : 7
 Concentration: 10 g/l
 Viscosity
 Viscosity, dynamic : 900 mPa.s (20 °C)
 Viscosity, kinematic : No data available
 Solubility(ies)
 Water solubility : No data available
 Solubility in other solvents : No data available
 Partition coefficient: n-octanol/water : No data available
 Vapour pressure : No data available
 Relative density : No data available
 Density : No data available
 Bulk density : 6,5 g/ml
 Relative vapour density : No data available

9.2 Other information

Oxidizing properties : No data available

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Self-ignition : > 400 °C

Evaporation rate : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid

Conditions to avoid : Keep away from heat, flame, sparks and other ignition sources.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified based on available information.

Skin corrosion/irritation


Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.
Product dust may be irritating to eyes, skin and respiratory system.

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Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information


Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

No data available

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12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: The bioaccumulation potential cannot be determined.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14: Transport information

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14.1 UN number or ID number**ADR:** Not dangerous goods**ADN:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.2 UN proper shipping name****ADR:** Not dangerous goods**ADN:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.3 Transport hazard class(es)****ADR:** Not dangerous goods**ADN:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.4 Packing group****ADR:** Not dangerous goods**ADN:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.5 Environmental hazards****ADR:** Not applicable**ADN:** Not applicable**RID:** Not applicable**IMDG-Code:** Not applicable**IATA-DGR:** Not applicable**14.6 Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet.

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Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable


UK REACH List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. : Not applicable

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

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- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

No data available


SECTION 16: Other information

Further information

Revision Date: 06.10.2022

Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic

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Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

ODOURLESS KEROSENE

Version 9.0

Print Date 2023/08/15

Revision date / valid from 2023/08/15

MSDS code: MKER001

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : ODOURLESS KEROSENE
Substance name : Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics
EC-No. : 926-141-6
EU REACH-Reg. No. : 01-2119456620-43-xxxx

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Identified use: See table in front of appendix for a complete overview of identified uses.
Uses advised against : At this moment we have not identified any uses advised against

1.3. Details of the supplier of the safety data sheet

Company : Brenntag UK Limited
Alpha House, Lawnswood Business Park
GB LS16 6QY Leeds
Telephone : +44 (0) 113 3879 200
Telefax : +44 (0) 113 3879 280
E-mail address : msds@brenntag.co.uk

1.4. Emergency telephone number

Emergency telephone number : Emergency only telephone number (open 24 hours):
+44 (0) 1865 407333 (N.C.E.C. Culham)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation S.I. 2019/720 (GB CLP)

Regulation S.I. 2019/720 (GB CLP)

Hazard class	Hazard category	Target Organs	Hazard statements
Aspiration hazard	Category 1	---	H304

For the full text of the H-Statements mentioned in this Section, see Section 16.


ODOURLESS KEROSENE

Most important adverse effects

Human Health	:	See section 11 for toxicological information.
Physical and chemical hazards	:	See section 9/10 for physicochemical information.
Potential environmental effects	:	See section 12 for environmental information.

2.2. Label elements

Labelling according to Regulation S.I. 2019/720 (GB CLP)

Hazard symbols	:	
Signal word	:	Danger
Hazard statements	:	H304 May be fatal if swallowed and enters airways.
Precautionary statements	:	
Response	:	P301 + P310 IF SWALLOWED: Immediately call a P331 POISON CENTER/ doctor. Do NOT induce vomiting.
Storage	:	P405 Store locked up.
Disposal	:	P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labelling:

EUH066 Repeated exposure may cause skin dryness or cracking.

Hazardous components which must be listed on the label:

|| • Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

2.3. Other hazards

ODOURLESS KEROSENE

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical nature : Unknown or Variable Composition Complex Reaction Products (UVCB)

Hazardous components	Amount [%]	Classification (Regulation S.I. 2019/720 (GB CLP))	
		Hazard class / Hazard category	Hazard statements
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics			
EC-No. : 926-141-6	100	Asp. Tox.1	H304
EU REACH-Reg. No. : 01-2119456620-43-xxxx			EUH066

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Take off all contaminated clothing immediately. Wash contaminated clothing before re-use.

If inhaled : In case of accident by inhalation: remove casualty to fresh air and keep at rest. If breathing is irregular or stopped, administer artificial respiration. If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. If skin irritation persists, call a physician.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes. If eye irritation persists, consult a

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specialist.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms : See Section 11 for more detailed information on health effects and symptoms.

Effects : May be fatal if swallowed and enters airways. Repeated exposure may cause skin dryness or cracking. See Section 11 for more detailed information on health effects and symptoms.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, foam, dry powder or CO₂.

Unsuitable extinguishing media : High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting : Hazardous decomposition products, Combustible material.

Hazardous combustion products : Carbon oxides, Smoke, Fumes

5.3. Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective suit)

Further advice : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Cool closed containers exposed to fire with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Keep

ODOURLESS KEROSENE

people away from and upwind of spill/leak.

6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Ensure adequate ventilation. Dike area of spill to prevent spreading and pump liquid to salvage tank. Keep in suitable, closed containers for disposal.

Further information : Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Avoid contact with skin. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or earthing procedures. Keep container tightly closed. Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

Hygiene measures : Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately. Wash contaminated clothing before re-use.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Take precautionary measures against static discharges. Keep away from heat and sources of ignition.

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Advice on protection against fire and explosion : Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. Ensure all equipment is electrically grounded before beginning transfer operations. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive (>,<) static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature (>,<) presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

Further information on storage conditions : Keep tightly closed in a dry and cool place. Keep in a well-ventilated place.

Advice on common storage : Keep away from food, drink and animal feedingstuffs. Incompatible with oxidizing agents.

Other data : Stable at normal ambient temperature and pressure.

Suitable packaging materials : Carbon steel, Stainless steel, Polyester, polyethylene containers, polypropylene, Teflon

Unsuitable packaging materials : , natural rubber, Butyl rubber, Ethylene-propylene-diene monomer (EPDM), polystyrene

7.3. Specific end use(s)

Specific use(s) : No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Component:	Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics
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Other Occupational Exposure Limit Values

Time Weighted Average (TWA):, Vapor., as total hydrocarbons
165 ppm, 1,200 mg/m³
Calculation according RCP-Method (TRGS 900).
Recommended by ExxonMobil

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8.2. Exposure controls

Appropriate engineering controls

Control measures to consider: Adequate ventilation should be provided so that exposure limits are not exceeded.

Use only explosion-proof equipment.
Refer to protective measures listed in sections 7 and 8.

Personal protective equipment

Respiratory protection

- Advice : In case of insufficient ventilation, wear suitable respiratory equipment.
Respiratory protection complying with EN 141.
- Filter Type : Type A

Hand protection

- Advice : Protective gloves complying with EN 374.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Protective gloves should be replaced at first signs of wear.
- Material : Nitrile rubber
Break through time : > 480 min
Glove thickness : > 0.38 mm

Eye protection

- Advice : Tightly fitting safety goggles

Skin and body protection

- Advice : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace.
Wear appropriate chemical resistant clothing and boots.

Environmental exposure controls

- General advice : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

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Form	:	clear, liquid
Physical state	:	liquid
Colour	:	colourless
Odour	:	slight
Odour Threshold	:	No data available
Pour point	:	< -48 °C Method: ASTM D5950
Boiling point/boiling range	:	203 - 238 °C Method: ASTM D 86
Flammability	:	No data available
Upper explosion limit / Upper flammability limit	:	6.0 %(V) (calculated)
Lower explosion limit / Lower flammability limit	:	0.6 %(V) (calculated)
Flash point	:	> 70 °C Method: ASTM D 93
Auto-ignition temperature	:	227 °C Method: ASTM E 659
Decomposition temperature	:	No data available
Self-Accelerating decomposition temperature (SADT)	:	No data available
pH	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	1.7 mm ² /s (40 °C) 2.3 mm ² /s (20 °C)
Flow time	:	No data available
Solubility(ies)		
Water solubility	:	negligible
Solubility in other solvents	:	No data available
Dissolution Rate	:	No data available

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Partition coefficient: n-octanol/water	:	log Pow: > 4
Dispersion Stability	:	No data available
Vapour pressure	:	0.02 kPa (20 °C) Method: (calculated)
Relative density	:	0.8 (15 °C) Reference substance: Water Method: (calculated)
Density	:	800 kg/m ³ (15 °C) Method: ISO 12185
Bulk density	:	No data available
Relative vapour density	:	> 1 (1010 hPa) Method: estimated (Air = 1.0)
Particle characteristics No data available		

9.2 Other information

Molecular weight	:	177 g/mol Method: (calculated)
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SECTION 10: Stability and reactivity

10.1. Reactivity

Advice : No decomposition if stored and applied as directed.

10.2. Chemical stability

Advice : Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Conditions to avoid : Keep away from heat and sources of ignition. Heat, flames and sparks. Take precautionary measures against static discharges.

10.5. Incompatible materials

Materials to avoid : Strong oxidising agents

10.6. Hazardous decomposition products

Hazardous decomposition products : Material does not decompose at ambient temperatures.

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SECTION 11: Toxicological information

11.1. Information on the hazard classes within the meaning of Regulation (EC) No. 1272/2008

Data for the product	
Acute toxicity	
Oral	
LD50	: > 5000 mg/kg (Rat) (OECD Test Guideline 401)
Inhalation	
LC50	: > 20 mg/l (Rat; 8 h; vapour) (OECD Test Guideline 403)
Dermal	
LD50	: > 5000 mg/kg (Rabbit) (OECD Test Guideline 402)
Irritation	
Skin	
Result	: (OECD Test Guideline 404)Prolonged skin contact may defat the skin and produce dermatitis.
Eyes	
Result	: Mild eye irritation (OECD Test Guideline 405)Direct contact with eyes may cause temporary irritation.
Sensitisation	
Result	: Not expected to be a respiratory sensitizer. (OECD Test Guideline 406)Not believed to be sensitizing to skin.
CMR effects	
CMR Properties	
Mutagenicity	: Did not show mutagenic effects on germ cells
Teratogenicity	: It is not considered teratogenic.
Reproductive toxicity	: Not expected to impair fertility.
Carcinogenicity	
(OECD Test Guideline 453)Not expected to be carcinogenic.	
Specific Target Organ Toxicity	
Single exposure	
Remarks	: The substance or mixture is not classified as specific target organ toxicant, single exposure.

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Repeated exposure

Remarks : Not expected to cause organ damage from prolonged or repeated exposure.

Other toxic properties
Repeated dose toxicity

; Health injuries are not known or expected under normal use.

Aspiration hazard

May be fatal if swallowed and enters airways.,

Component: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Acute toxicity
Oral

LD50 : > 5000 mg/kg (Rat)

Inhalation

LC50 : > 20 mg/l (Rat; 4 h)

Dermal

LD50 : > 5000 mg/kg (Rat)

Irritation
Skin

Result : Mild skin irritation

Eyes

Result : No eye irritation

Sensitisation

Result : not sensitizing

CMR effects
CMR Properties

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Carcinogenicity	:	It is not considered carcinogenic.
Mutagenicity	:	It is not considered mutagenic.
Teratogenicity	:	It is not considered teratogenic.
Reproductive toxicity	:	It is not considered toxic for reproduction.

Specific Target Organ Toxicity

Single exposure

Remarks : No data available

Repeated exposure

Skin contact : Decreases the skin which may cause dry and rough. Prolonged or repeated skin contact may result in dermatitis.

Other toxic properties

Aspiration hazard

May be fatal if swallowed and enters airways.,

11.2. Information on other hazards

Data for the product

Endocrine disrupting properties

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1. Toxicity

Data for the product

Acute toxicity

Fish

LL0 : 1,000 mg/l (Oncorhynchus mykiss; 96 h)

Toxicity to daphnia and other aquatic invertebrates

ELO : 1,000 mg/l (Daphnia magna; 48 h)

algae

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ELO : 1000 mg/l (Pseudokirchneriella subcapitata (microalgae); 72 h)

Short-term (acute) aquatic hazard

Result : Not expected to be harmful to aquatic organisms.

Chronic toxicity

Long-term (chronic) aquatic hazard

Result : Not expected to demonstrate chronic toxicity to aquatic organisms.

Component: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Acute toxicity

Fish

: This product has no known ecotoxicological effects.

Toxicity to daphnia and other aquatic invertebrates

: This product has no known ecotoxicological effects.

algae

: This product has no known ecotoxicological effects.

12.2. Persistence and degradability

Data for the product

Persistence and degradability

Biodegradability

Result : 69 % (Exposure Time: 28 d) Readily biodegradable.

Component: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Persistence and degradability

Persistence

Result : Oxidises rapidly by photo-chemical reactions in air.

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Biodegradability

Result : Readily biodegradable.

12.3. Bioaccumulative potential

Data for the product

Bioaccumulation

Result : not determined

Component: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Bioaccumulation

Result : log Kow 6 - 8.2
: Bioaccumulation is expected.

12.4. Mobility in soil

Data for the product

Mobility

Result : No data available

Component: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Mobility

Water : The product is insoluble and floats on water.
Soil : Adsorption to solid soil phase can be expected.

12.5. Results of PBT and vPvB assessment

Data for the product

Results of PBT and vPvB assessment

Result : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Result : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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Component: Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics

Results of PBT and vPvB assessment

Result : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6. Endocrine disrupting properties

Data for the product

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7. Other adverse effects

Data for the product

Additional ecological information

Result : Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product : Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.

Contaminated packaging : Dispose of contaminated packaging in the same way as the product. In accordance with local and national regulations.

European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information

Not dangerous goods for ADR, RID, IMDG and IATA.

14.1. UN number or ID number

Not applicable.

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14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packaging group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for user

Not applicable.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Component:	Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics
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EU. Directive : ; The substance/mixture does not fall under this legislation.
2012/18/EU (SEVESO
III) on major accident
hazards involving
dangerous substances,
Annex I

15.2. Chemical safety assessment

No data available

SECTION 16: Other information

II

Full text of H-Statements referred to under sections 2 and 3.

H304 May be fatal if swallowed and enters airways.

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Abbreviations and Acronyms

AU AIICL	Australia. Industrial Chemicals Act (AIIC) List
BCF	bioconcentration factor
BOD	biochemical oxygen demand
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	carcinogenic, mutagenic or toxic to reproduction
COD	chemical oxygen demand
DNEL	derived no-effect level
DSL	Canada. Environmental Protection Act, Domestic Substances List
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS (JP)	Japan. Kashin-Hou Law List
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IECSC	China. Inventory of Existing Chemical Substances
INSQ	Mexico. National Inventory of Chemical Substances
ISHL (JP)	Japan. Inventory of Industrial Safety & Health
KECI (KR)	Korea. Existing Chemicals Inventory
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NDSL	Canada. Environmental Protection Act. Non-Domestic Substances List
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
NZIOC	New Zealand. Inventory of Chemicals
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
ONT INV	Canada. Ontario Inventory List
PBT	persistent, bioaccumulative and toxic
PHARM (JP)	Japan. Pharmacopoeia Listing
PICCS (PH)	Philippines. Inventory of Chemicals and Chemical Substances
PNEC	predicted no-effect concentration
REACH Auth. No.:	REACH Authorisation Number
REACH AuthAppC. No.	REACH Authorisation Application Consultation Number

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UK REACH Auth. No.:	UK REACH Authorisation Number
UK REACH AuthAppC. No.	UK REACH Authorisation Application Consultation Number
UK REACH-Reg.No	UK REACH Registration Number
STOT	specific target organ toxicity
SVHC	substance of very high concern
TCSI	Taiwan. Existing Chemicals Inventory
TH INV	Thailand. Existing Chemicals Inventory from FDA
TSCA	US. Toxic Substances Control Act
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
VN INVL	Vietnam. National Chemical Inventory
vPvB	very persistent and very bioaccumulative

Further information

Key literature references and sources for data : Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

Methods used for product classification : The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.

Hints for trainings : The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.

Other information : The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship.

The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

|| Indicates updated section.

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No.	Short title	REACH Auth. No.:/ REACH AuthAppC. No.	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	NA NA	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 15	1, 4	NA	ES17122
2	Distribution of substance	NA NA	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 9, 15	1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7	NA	ES17130
3	Formulation & (re)packing of substances and mixtures	NA NA	3	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15	2	NA	ES17137
4	Use in rubber production and processing	NA NA	3	8, 9, 11, 12, 13	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 13, 14, 15, 21	1, 4, 6d, 7	NA	ES17155
5	Use in polymer processing	NA NA	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 13, 14, 21	4	NA	ES17157
6	Use in polymer processing	NA NA	22	NA	NA	1, 2, 6, 8a, 8b, 14, 21	8a, 8d	NA	ES17192
7	Use in coatings	NA NA	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15	4	NA	ES17139
8	Use in coatings	NA NA	21	NA	1, 4, 8, 9a, 9b, 9c, 15, 18, 23, 24, 31, 34	NA	8a, 8d	NA	ES17202
9	Use in coatings	NA NA	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15, 19	8a, 8d	NA	ES17172
10	Use in cleaning agents	NA NA	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 10, 13	4	NA	ES17141
11	Use in cleaning agents	NA NA	21	NA	3, 4, 8, 9a, 9b, 9c, 24, 35, 38	NA	8a, 8d	NA	ES17207
12	Use in cleaning agents	NA NA	22	NA	NA	1, 2, 3, 4, 8a, 8b, 10, 11, 13, 19	8a, 8d	NA	ES17174

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13	Use in binder and release agents	NA NA	3	NA	NA	1, 2, 3, 4, 6, 7, 8a, 8b, 10, 13, 14	4	NA	ES17149
14	Use in binder and release agents	NA NA	22	NA	NA	1, 2, 3, 4, 6, 8a, 8b, 10, 11, 14	8a, 8d	NA	ES17180
15	Use in agrochemicals	NA NA	21	NA	12, 27	NA	8a, 8d	NA	ES17211
16	Use in fuel	NA NA	3	NA	NA	1, 2, 3, 8a, 8b, 16	7	NA	ES17151
17	Use in fuel	NA NA	21	NA	13	NA	9a, 9b	NA	ES17213
18	Use in fuel	NA NA	22	NA	NA	1, 2, 3, 8a, 8b, 16	9a, 9b	NA	ES17296
19	Use as lubricants	NA NA	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 9, 10, 13, 17, 18	4, 7	NA	ES17143
20	Use as lubricants	NA NA	21	NA	1, 24, 31	NA	8a, 8d, 9a, 9b	NA	ES17209
21	Use as lubricants	NA NA	22	NA	NA	1, 2, 3, 4, 8a, 8b, 9, 10, 11, 13, 17, 18, 20	8a, 8d, 9a, 9b	NA	ES17176
22	Use in laboratories	NA NA	3	NA	NA	10, 15	2, 4	NA	ES17153
23	Use in laboratories	NA NA	22	NA	NA	10, 15	8a, 9a	NA	ES17188
24	Use in de-icing and anti-icing applications	NA NA	22	NA	NA	1, 2, 8a, 8b, 11	8a, 8d	NA	ES17184
25	Use in explosives	NA NA	22	NA	NA	1, 2, 3, 5, 8a, 8b	8e	NA	ES17190

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		NA							
26	Other consumer uses	NA NA	21	NA	28, 39	NA	8a, 8d	NA	ES17217
27	Use in metal working fluids / rolling oils	NA NA	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 17	4	NA	ES17145
28	Use in metal working fluids / rolling oils	NA NA	22	NA	NA	1, 2, 3, 5, 8a, 8b, 9, 10, 11, 13, 17	8a, 8d	NA	ES17178
29	Use as Functional Fluids	NA NA	3	NA	NA	1, 2, 3, 4, 8a, 8b, 9	7	NA	ES17164
30	Use as Functional Fluids	NA NA	21	NA	16, 17	NA	9a, 9b	NA	ES17215
31	Use as Functional Fluids	NA NA	22	NA	NA	1, 2, 3, 8a, 9, 20	9a, 9b	NA	ES17182
32	Use in road and construction applications	NA NA	22	NA	NA	1, 2, 8a, 8b, 9, 10, 11, 13	8d, 8f	NA	ES17186
33	Use as water treatment chemicals	NA NA	3	NA	NA	1, 2, 3, 4, 8a, 8b, 13	3, 4	NA	ES17159
34	Use as water treatment chemicals	NA NA	22	NA	NA	1, 2, 3, 4, 8a, 8b, 13	8f	NA	ES17200

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1. Short title of Exposure Scenario 1: Manufacture of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC15: Use as laboratory reagent
Environmental Release Categories	ERC1: Manufacture of substances ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC4

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the

ODOURLESS KEROSENE**Exposure Scenario**

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 2: Distribution of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC3: Formulation in materials ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC5: Industrial use resulting in inclusion into or onto a matrix ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates) ERC6b: Industrial use of reactive processing aids ERC6c: Industrial use of monomers for manufacture of thermoplastics ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers ERC7: Industrial use of substances in closed systems
Activity	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures For substances classified as H304, the following measures need to be	

ODOURLESS KEROSENE

implemented to control the aspiration hazard
Do not ingest.
If swallowed then seek immediate medical attention
Do NOT induce vomiting.
A DNEL cannot be derived

3. Exposure estimation and reference to its source**Workers**

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 3: Formulation & (re)packing of substances and mixtures

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>PROC15: Use as laboratory reagent</p>
Environmental Release Categories	ERC2: Formulation of preparations
Activity	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC2

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

ODOURLESS KEROSENE

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 4: Use in rubber production and processing

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals SU11: Manufacture of rubber products SU12: Manufacture of plastics products, including compounding and conversion SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent PROC21: Low energy manipulation of substances bound in materials and/ or articles
Environmental Release Categories	ERC1: Manufacture of substances ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers ERC7: Industrial use of substances in closed systems
Activity	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC4, ERC6d, ERC7

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC21

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is	

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vomited following ingestion
Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures
For substances classified as H304, the following measures need to be implemented to control the aspiration hazard
Do not ingest.
If swallowed then seek immediate medical attention
Do NOT induce vomiting.
A DNEL cannot be derived

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 5: Use in polymer processing

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC6: Calendering operations</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>PROC21: Low energy manipulation of substances bound in materials and/ or articles</p>
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Processing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance

2.1 Contributing scenario controlling environmental exposure for: ERC4

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC21

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid

Frequency and duration of use: Covers daily exposures up to 8 hours

Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>
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3. Exposure estimation and reference to its source

ODOURLESS KEROSENE**Workers**

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 6: Use in polymer processing

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC6: Calendering operations</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>PROC21: Low energy manipulation of substances bound in materials and/ or articles</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p>
Activity	Processing of formulated polymers including material transfers, moulding and forming activities, material re-works and associated maintenance

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC6, PROC8a, PROC8b, PROC14, PROC21

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid

Frequency and duration of use: Covers daily exposures up to 8 hours

Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>
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3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 7: Use in coatings

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>PROC15: Use as laboratory reagent</p>
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC4

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

ODOURLESS KEROSENE**3. Exposure estimation and reference to its source****Workers**

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 8: Use in coatings

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC1: Adhesives, sealants PC4: Anti-Freeze and de-icing products PC8: Biocidal products (e.g. Disinfectants, pest control) PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC15: Non-metal-surface treatment products PC18: Ink and toners PC23: Leather treatment products PC24: Lubricants, greases, release products PC31: Polishes and wax blends PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling consumer exposure for: PC1, PC4, PC8, PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34,

Product characteristics	Physical Form (at time of use)	liquid
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>A DNEL cannot be derived</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do NOT induce vomiting.</p> <p>If swallowed then seek immediate medical attention</p> <p>Keep lamps filled with this liquid out of the reach of children.</p>

3. Exposure estimation and reference to its source

Consumers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 9: Use in coatings

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC15: Use as laboratory reagent</p> <p>PROC19: Hand-mixing with intimate contact and only PPE available</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p>
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

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Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 10: Use in cleaning agents

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC10: Roller application or brushing</p> <p>PROC13: Treatment of articles by dipping and pouring</p>
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

2.1 Contributing scenario controlling environmental exposure for: ERC4

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13

Activity	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

ODOURLESS KEROSENE

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 11: Use in cleaning agents

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC3: Air care products PC4: Anti-Freeze and de-icing products PC8: Biocidal products (e.g. Disinfectants, pest control) PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC24: Lubricants, greases, release products PC35: Washing and cleaning products PC38: Welding and soldering products (with flux coatings or flux cores.), flux products
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
Activity	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling consumer exposure for: PC3, PC4, PC8, PC9a, PC9b, PC9c, PC24, PC35, PC38

Product characteristics	Physical Form (at time of use)	
		liquid
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>A DNEL cannot be derived</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>Keep lamps filled with this liquid out of the reach of children.</p>

3. Exposure estimation and reference to its source

Consumers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to

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at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

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1. Short title of Exposure Scenario 12: Use in cleaning agents

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC19: Hand-mixing with intimate contact and only PPE available</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p>
Activity	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC19

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the

ODOURLESS KEROSENE

Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 13: Use in binder and release agents

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC6: Calendering operations</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC10: Roller application or brushing</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation</p>
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), mould forming and casting, and handling of waste.

2.1 Contributing scenario controlling environmental exposure for: ERC4

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC6, PROC7, PROC8a, PROC8b, PROC10, PROC13, PROC14

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

ODOURLESS KEROSENE

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 14: Use in binder and release agents

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC6: Calendering operations</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p>
Activity	Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC6, PROC8a, PROC8b, PROC10, PROC11, PROC14

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid

Frequency and duration of use: Covers daily exposures up to 8 hours

Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>
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3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ODOURLESS KEROSENE

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 15: Use in agrochemicals

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC12: Fertilizers PC27: Plant protection products
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
Activity	Covers the consumer use in agrochemicals in liquid and solid forms.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling consumer exposure for: PC12, PC27

Product characteristics	Physical Form (at time of use)	liquid
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>A DNEL cannot be derived</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>Keep lamps filled with this liquid out of the reach of children.</p>

3. Exposure estimation and reference to its source

Consumers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 16: Use in fuel

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC16: Using material as fuel sources, limited exposure to unburned product to be expected</p>
Environmental Release Categories	ERC7: Industrial use of substances in closed systems
Activity	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

2.1 Contributing scenario controlling environmental exposure for: ERC7

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

ODOURLESS KEROSENE

Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 17: Use in fuel

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC13: Fuels
Environmental Release Categories	ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems
Activity	Covers consumer uses of automotive fuels only.

2.1 Contributing scenario controlling environmental exposure for: ERC9a, ERC9b

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling consumer exposure for: PC13

Product characteristics	Physical Form (at time of use)	liquid
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>A DNEL cannot be derived</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>Keep lamps filled with this liquid out of the reach of children.</p>

3. Exposure estimation and reference to its source

Consumers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 18: Use in fuel

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC16: Using material as fuel sources, limited exposure to unburned product to be expected</p>
Environmental Release Categories	<p>ERC9a: Wide dispersive indoor use of substances in closed systems</p> <p>ERC9b: Wide dispersive outdoor use of substances in closed systems</p>
Activity	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

2.1 Contributing scenario controlling environmental exposure for: ERC9a, ERC9b

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid

Frequency and duration of use: Covers daily exposures up to 8 hours

Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>
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3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

ODOURLESS KEROSENE

Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 19: Use as lubricants

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC17: Lubrication at high energy conditions and in partly open process</p> <p>PROC18: Greasing at high energy conditions</p>
Environmental Release Categories	<p>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</p> <p>ERC7: Industrial use of substances in closed systems</p>
Activity	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC7

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

ODOURLESS KEROSENE

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 20: Use as lubricants

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC1: Adhesives, sealants PC24: Lubricants, greases, release products PC31: Polishes and wax blends
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems
Activity	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d, ERC9a, ERC9b

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling consumer exposure for: PC1, PC24, PC31

Product characteristics	Physical Form (at time of use)	liquid
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>A DNEL cannot be derived</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>Keep lamps filled with this liquid out of the reach of children.</p>

3. Exposure estimation and reference to its source

Consumers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 21: Use as lubricants

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC17: Lubrication at high energy conditions and in partly open process</p> <p>PROC18: Greasing at high energy conditions</p> <p>PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p> <p>ERC9a: Wide dispersive indoor use of substances in closed systems</p> <p>ERC9b: Wide dispersive outdoor use of substances in closed systems</p>
Activity	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d, ERC9a, ERC9b

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC1, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

ODOURLESS KEROSENE

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 22: Use in laboratories

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Use of the substance within laboratory settings, including material transfers and equipment cleaning

2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC4

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 23: Use in laboratories

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC9a: Wide dispersive indoor use of substances in closed systems
Activity	Use of small quantities within laboratory settings, including material transfers and equipment cleaning

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC9a

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid

Frequency and duration of use: Covers daily exposures up to 8 hours

Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>
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3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 24: Use in de-icing and anti-icing applications

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC11: Non industrial spraying
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
Activity	Ice prevention and de-icing of vehicles, aircraft and other equipment by spraying

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC8a, PROC8b, PROC11

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 25: Use in explosives

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p>
Environmental Release Categories	ERC8e: Wide dispersive outdoor use of reactive substances in open systems
Activity	Covers exposures arising from the manufacture and use of slurry explosives (including materials transfer, mixing and charging) and equipment cleaning.

2.1 Contributing scenario controlling environmental exposure for: ERC8e

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

ODOURLESS KEROSENE

Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 26: Other consumer uses

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC28: Perfumes, fragrances PC39: Cosmetics, personal care products
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems
Activity	Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation, Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling consumer exposure for: PC28, PC39

Product characteristics	Physical Form (at time of use)	liquid
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion A DNEL cannot be derived Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures For substances classified as H304, the following measures need to be implemented to control the aspiration hazard Do not ingest. If swallowed then seek immediate medical attention Do NOT induce vomiting. Keep lamps filled with this liquid out of the reach of children.</p>

3. Exposure estimation and reference to its source

Consumers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 27: Use in metal working fluids / rolling oils

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC17: Lubrication at high energy conditions and in partly open process</p>
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

2.1 Contributing scenario controlling environmental exposure for: ERC4

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid

Frequency and duration of use: Covers daily exposures up to 8 hours

Organisational measures to prevent /limit releases, dispersion and exposure

The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion

Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures

For substances classified as H304, the following measures need to be implemented to control the aspiration hazard

Do not ingest.

If swallowed then seek immediate medical attention

Do NOT induce vomiting.

A DNEL cannot be derived

3. Exposure estimation and reference to its source

ODOURLESS KEROSENE

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 28: Use in metal working fluids / rolling oils

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC17: Lubrication at high energy conditions and in partly open process</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p>
Activity	Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC10, PROC13, PROC17

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

ODOURLESS KEROSENE**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 29: Use as Functional Fluids

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p>
Environmental Release Categories	ERC7: Industrial use of substances in closed systems
Activity	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

2.1 Contributing scenario controlling environmental exposure for: ERC7

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ODOURLESS KEROSENE

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.
Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 30: Use as Functional Fluids

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC16: Heat transfer fluids PC17: Hydraulic fluids
Environmental Release Categories	ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems
Activity	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants

2.1 Contributing scenario controlling environmental exposure for: ERC9a, ERC9b

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling consumer exposure for: PC16, PC17

Product characteristics	Physical Form (at time of use)	liquid
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>A DNEL cannot be derived</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>Keep lamps filled with this liquid out of the reach of children.</p>

3. Exposure estimation and reference to its source

Consumers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 31: Use as Functional Fluids

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems</p>
Environmental Release Categories	<p>ERC9a: Wide dispersive indoor use of substances in closed systems</p> <p>ERC9b: Wide dispersive outdoor use of substances in closed systems</p>
Activity	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

2.1 Contributing scenario controlling environmental exposure for: ERC9a, ERC9b

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC9, PROC20

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to

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at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 32: Use in road and construction applications

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC13: Treatment of articles by dipping and pouring</p>
Environmental Release Categories	<p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p> <p>ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix</p>
Activity	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC8d, ERC8f

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk

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Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 33: Use as water treatment chemicals

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC13: Treatment of articles by dipping and pouring</p>
Environmental Release Categories	<p>ERC3: Formulation in materials</p> <p>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</p>
Activity	Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems.

2.1 Contributing scenario controlling environmental exposure for: ERC3, ERC4

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk

ODOURLESS KEROSENE

Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

ODOURLESS KEROSENE

1. Short title of Exposure Scenario 34: Use as water treatment chemicals

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities</p> <p>PROC13: Treatment of articles by dipping and pouring</p>
Environmental Release Categories	ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Activity	Covers the use of the substance for the treatment of water in open and closed systems.

2.1 Contributing scenario controlling environmental exposure for: ERC8f

As no environmental hazard was identified no environmental related exposure assessment and risk characterization was performed

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	liquid
Frequency and duration of use	Covers daily exposures up to 8 hours	
Organisational measures to prevent /limit releases, dispersion and exposure	<p>The H304 risk phrase (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion</p> <p>Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures</p> <p>For substances classified as H304, the following measures need to be implemented to control the aspiration hazard</p> <p>Do not ingest.</p> <p>If swallowed then seek immediate medical attention</p> <p>Do NOT induce vomiting.</p> <p>A DNEL cannot be derived</p>	

3. Exposure estimation and reference to its source

Workers

Qualitative approach used to conclude safe use.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to

ODOURLESS KEROSENE

at least equivalent levels.

Available hazard data do not support the need for a DNEL to be established for other health effects.

Risk management measures are based on qualitative risk characterisation.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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Version: 1.1

Conforms to EU Regulation 1907/2006/EC as amended. - SDSGHS_GB

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name : Crepetrol™ M278
Creping Adhesive
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

1.2 Recommended use of the chemical and restrictions on use

1.3 Details of the supplier of the safety data sheet Solenis Pesetastraat 5 2991XT Barendrecht Netherlands EHSPProductSafetyTeam@solenis.com	1.4 Emergency telephone number 00 800-7653-6471 , or contact your local emergency telephone number at 112 Product Information +31 10 497 5000 (in the Netherlands), or contact your local CSR contact person
--	---

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Not a hazardous substance or mixture.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)**

Not a hazardous substance or mixture.

2.3 Other hazards**Additional advice**

No information available.

SECTION 3: Composition/information on ingredients**3.2 Mixtures****Hazardous components**

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Remarks : No hazardous ingredients

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
 Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
 If unconscious place in recovery position and seek medical advice.
 If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
 If on skin, rinse well with water.
 Wash contaminated clothing before re-use.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
 Remove contact lenses.
 Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
 stomach or intestinal upset (nausea, vomiting, diarrhea)
 irritation (nose, throat, airways)
 Cough
- Risks : Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : No hazards which require special first aid measures.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Water spray
 Foam
 Carbon dioxide (CO₂)
 Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Ammonia
 Nitrogen oxides (NO_x)
 Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Standard procedure for chemical fires.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
 Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
 Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

Environmental precautions : Prevent further leakage or spillage if safe to do so.

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6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.
 Do not smoke.
 Container hazardous when empty.
 Avoid contact with skin and eyes.
 Smoking, eating and drinking should be prohibited in the application area.
 For personal protection see section 8.
 Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below

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exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Eye protection : Safety glasses

- Hand protection
 - Material : butyl-rubber

 - Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

- Skin and body protection : Wear as appropriate:
 impervious clothing
 Safety shoes
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Discard gloves that show tears, pinholes, or signs of wear.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : liquid

- Colour : colourless

- Odour : odourless

- Odour Threshold : No data available

- pH : Approximate 4,0

- Melting point/freezing point : No data available

- Boiling point/boiling range : > 100 °C

- Flash point : does not flash

- Evaporation rate : No data available

- Flammability (solid, gas) : No data available

- Upper explosion limit : No data available

- Lower explosion limit : No data available

- Vapour pressure : No data available

- Relative vapour density : No data available

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Relative density : No data available

Density : > 1,0 g/cm³

Solubility(ies)

Water solubility : 220 g/l (0 °C)

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Thermal decomposition : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

9.2 Other information

No data available

SECTION 10: Stability and reactivity**10.1 Reactivity**

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid

Conditions to avoid : excessive heat
Exposure to moisture

10.5 Incompatible materials

Materials to avoid : aluminum
hypochlorites
Iron

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steel
Strong bases
strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Nitrogen oxides (NO_x)
Oxides of phosphorus
Ammonia

SECTION 11: Toxicological information**11.1 Information on toxicological effects**

Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Product:

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

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STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information**Product:**

Remarks: No data available

SECTION 12: Ecological information**12.1 Toxicity**

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: The bioaccumulation potential cannot be determined.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects**Product:**

Additional ecological information : No data available

SECTION 13: Disposal considerations**13.1 Waste treatment methods**Product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.

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Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste
handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: Transport information**SECTION 14: Transport information****14.1 UN number****ADR:** Not dangerous goods**ADNR:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.2 UN proper shipping name****ADR:** Not dangerous goods**ADNR:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.3 Transport hazard class(es)****ADR:** Not dangerous goods**ADNR:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.4 Packing group****ADR:** Not dangerous goods**ADNR:** Not dangerous goods**RID:** Not dangerous goods**IMDG-Code:** Not dangerous goods**IATA-DGR:** Not dangerous goods**14.5 Environmental hazards****ADR:** Not applicable**ADNR:** Not applicable**RID:** Not applicable**IMDG-Code:** Not applicable

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IATA-DGR: Not applicable
 : Not applicable

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Ship Type: Not applicable
 Hazard code(s): Not applicable
 Pollutant Category: Not applicable

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 57) : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Ammonium dihydrogenorthophosphate

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
 Not applicable

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL All components of this product are on the Canadian DSL.

AUSTR On the inventory, or in compliance with the inventory

NZIOC On the inventory, or in compliance with the inventory

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ENCS	On the inventory, or in compliance with the inventory
KECL	On the inventory, or in compliance with the inventory
PHIL	On the inventory, or in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECL (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

15.2 Chemical Safety Assessment

No data available

SECTION 16: Other information**Further information**

Revision Date: 06.06.2015

Full text of H-Statements referred to under sections 2 and 3.**Further information**

Other information : The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by the Solenis Environmental Health and Safety Department.

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists

BEI : Biological Exposure Index

CAS : Chemical Abstracts Service (Division of the American Chemical Society).

CMR : Carcinogenic, Mutagenic or Toxic for Reproduction

FG : Food grade

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GHS : Globally Harmonized System of Classification and Labeling of Chemicals.

H-statement : Hazard Statement

IATA : International Air Transport Association.

IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization

ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"

IMDG : International Maritime Code for Dangerous Goods

ISO : International Organization for Standardization

logPow : octanol-water partition coefficient

LCxx : Lethal Concentration, for xx percent of test population

LDxx : Lethal Dose, for xx percent of test population.

ICxx : Inhibitory Concentration for xx of a substance

Ecxx : Effective Concentration of xx

N.O.S.: Not Otherwise Specified

OECD : Organization for Economic Co-operation and Development

OEL : Occupational Exposure Limit

P-Statement : Precautionary Statement

PBT : Persistent , Bioaccumulative and Toxic

PPE : Personal Protective Equipment

STEL : Short-term exposure limit

STOT : Specific Target Organ Toxicity

TLV : Threshold Limit Value

TWA : Time-weighted average

vPvB : Very Persistent and Very Bioaccumulative

WEL : Workplace Exposure Level

ABM : Water Hazard Class for the Netherlands

ADR : Agreement concerning the International Carriage of Dangerous Goods by Road.

ADNR: Regulation for the Carriage of Dangerous Substances on the Rhine

CLP : Classification, Labelling and Packaging

CSA : Chemical Safety Assessment

CSR : Chemical Safety Report

DNEL : Derived No Effect Level.

EINECS : European Inventory of Existing Commercial Chemical Substances.

ELINCS : European List of Notified Chemical Substances

PEC : Predicted Effect Concentration

PEL : Permissible Exposure Limits

PNEC : Predicted No Effect Concentration

REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals

RID : Regulation Concerning the International Transport of Dangerous Goods by Rail

WGK : German Water Hazard Class

EWS YT1000

Eureka Water Services

Version No: 1.1

Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Issue Date: **13/03/2024**

Print Date: **13/03/2024**

S.REACH.GB.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

1.1. Product Identifier

Product name	EWS YT1000
Chemical Name	Not Applicable
Synonyms	EWS-YT1000
Proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (contains morpholine and cyclohexylamine)
Chemical formula	Not Applicable
Other means of identification	Not Available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Neutralising amine for steam (condensate) systems
Uses advised against	No specific uses advised against are identified.

1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	Eureka Water Services
Address	Sophia House, 28 Cathedral Road Cardiff CF11 9LJ United Kingdom
Telephone	02920 660178
Fax	Not Available
Website	www.eurekawater.co.uk
Email	info@eurekawater.co.uk

1.4. Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [1]	H302 - Acute Toxicity (Oral) Category 4, H312 - Acute Toxicity (Dermal) Category 4, H314 - Skin Corrosion/Irritation Category 1B, H318 - Serious Eye Damage/Eye Irritation Category 1, H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H361f - Reproductive Toxicity Category 2
Legend:	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567

2.2. Label elements

Hazard pictogram(s)	
Signal word	Danger

Hazard statement(s)

EWS YT1000

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.
H361f	Suspected of damaging fertility.

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P260	Do not breathe mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P270	Do not eat, drink or smoke when using this product.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If more than 15 mins from Doctor, INDUCE VOMITING (if conscious).
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P363	Wash contaminated clothing before reuse.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
------	--

Material contains morpholine, diethylaminoethanol, cyclohexylamine.

2.3. Other hazards

morpholine	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
diethylaminoethanol	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
cyclohexylamine	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

SECTION 3 Composition / information on ingredients**3.1.Substances**

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1. CAS No 2. EC No 3. Index No 4. REACH No	[%weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1. 110-91-8 2. 203-815-1 3. 613-028-00-9 4. Not Available	10-30	<u>morpholine</u> *	Flammable Liquids Category 3, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 1B, Acute Toxicity (Inhalation) Category 4; H226, H302, H312, H314, H332 [2]	Not Available	Not Available
1. 100-37-8 2. 202-845-2 3. 603-048-00-6 4. Not Available	10-30	<u>diethylaminoethanol</u>	Flammable Liquids Category 3, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 1B, Acute Toxicity (Inhalation) Category 4; H226, H302, H312, H314, H332 [2]	STOT SE 3; H335: C ≥ 5 %	Not Available
1. 108-91-8 2. 203-629-0 3. 612-050-00-6 4. Not Available	10-30	<u>cyclohexylamine</u>	Flammable Liquids Category 3, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 1B, Reproductive Toxicity Category 2; H226, H302, H312, H314, H361f [2]	Not Available	Not Available

Continued...

Legend:	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties
----------------	---

SECTION 4 First aid measures

4.1. Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▶ Quickly remove all contaminated clothing, including footwear. ▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▶ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. ▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. ▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. <p>This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)</p>
Ingestion	<ul style="list-style-type: none"> ▶ For advice, contact a Poisons Information Centre or a doctor at once. ▶ Urgent hospital treatment is likely to be needed. ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Transport to hospital or doctor without delay.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

The material may induce methaemoglobinaemia following exposure.

- ▶ Initial attention should be directed at oxygen delivery and assisted ventilation if necessary. Hyperbaric oxygen has not demonstrated substantial benefits.
- ▶ Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.
- ▶ Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis, alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 50 minutes; repeat, using the same dose, if symptoms of hypoxia fail to subside within 1 hour.
- ▶ Thorough cleansing of the entire contaminated area of the body, including the scalp and nails, is of utmost importance.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comment
1. Methaemoglobin in blood	1.5% of haemoglobin	During or end of shift	B, NS, SQ

B: Background levels occur in specimens collected from subjects **NOT** exposed

NS: Non-specific determinant; also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

For acute or short-term repeated exposures to highly alkaline materials:

- ▶ Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- ▶ Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- ▶ Oxygen is given as indicated.
- ▶ The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- ▶ Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:

- ▶ Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.

- ▶ Neutralising agents should never be given since exothermic heat reaction may compound injury.

* Catharsis and emesis are absolutely contra-indicated.

* Activated charcoal does not absorb alkali.

* Gastric lavage should not be used.

Supportive care involves the following:

- ▶ Withhold oral feedings initially.
- ▶ If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- ▶ Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- ▶ Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- ▶ Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

SECTION 5 Firefighting measures

5.1. Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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5.3. Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Use fire fighting procedures suitable for surrounding area. ▶ Do not approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	<p>WARNING: In use may form flammable/ explosive vapour-air mixtures.</p> <ul style="list-style-type: none"> ▶ Combustible. ▶ Slight fire hazard when exposed to heat or flame. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). ▶ May emit acrid smoke. ▶ Mists containing combustible materials may be explosive. <p>Combustion products include:</p> <ul style="list-style-type: none"> ▶ carbon dioxide (CO₂) ▶ nitrogen oxides (NO_x) ▶ other pyrolysis products typical of burning organic material. <p>May emit corrosive fumes.</p>

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▶ Check regularly for spills and leaks. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. ▶ Wipe up. ▶ Place in a suitable, labelled container for waste disposal.
Major Spills	<ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Consider evacuation (or protect in place). ▶ Stop leak if safe to do so. ▶ Contain spill with sand, earth or vermiculite. ▶ Collect recoverable product into labelled containers for recycling. ▶ Neutralise/decontaminate residue (see Section 13 for specific agent). ▶ Collect solid residues and seal in labelled drums for disposal. ▶ Wash area and prevent runoff into drains. ▶ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▶ If contamination of drains or waterways occurs, advise emergency services.

6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material. ▶ Avoid smoking, naked lights or ignition sources. ▶ Avoid contact with incompatible materials.
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	<ul style="list-style-type: none"> ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Fire and explosion protection	See section 5
Other information	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ DO NOT store near acids, or oxidising agents ▶ No smoking, naked lights, heat or ignition sources.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks. <p>For low viscosity materials</p> <ul style="list-style-type: none"> ▶ Drums and jerricans must be of the non-removable head type. ▶ Where a can is to be used as an inner package, the can must have a screwed enclosure. <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> ▶ Removable head packaging; ▶ Cans with friction closures and ▶ low pressure tubes and cartridges <p>may be used.</p> <p>-</p> <p>Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.</p> <p>Morpholine can be stored for an unlimited time in iron or steel containers if protected from atmospheric moisture and carbon dioxide. However, it is unstable in the presence of copper, zinc and their alloys and these metals should not be used in storage containers for morpholine</p>
Storage incompatibility	<p>Cyclohexylamine</p> <ul style="list-style-type: none"> ▶ is a strong organic base ▶ reacts violently with strong oxidisers, nitric acid ▶ may form heat-sensitive explosive materials with digold ketenide ▶ is incompatible with acids, acid halides, alcohols, aldehydes, acrylates, substituted allyls, alkylene oxides, anhydrides, cresols, caprolactam solution, epichlorohydrin, epoxides, isocyanates, glycols, halogenated organics, ketones, lead, peroxides, phenols, vinyl acetate ▶ contact with strong reducing agents may generate flammable hydrogen gas ▶ attacks copper and its alloys, aluminium <p>Diethylaminoethanol:</p> <ul style="list-style-type: none"> ▶ reacts violently with oxidisers, strong acids, acid anhydrides ▶ reacts with light metals, aluminium, beryllium, magnesium, alkali metals ▶ attacks some rubbers and plastics <p>Secondary amines form salts with strong acids and can be oxidized to the corresponding nitrene using hydrogen peroxide, catalyzed by selenium dioxide</p> <p>Morpholine</p> <ul style="list-style-type: none"> ▶ reacts violently with strong oxidising and may ignite ▶ reacts violently with acids, cellulose nitrate, nitromethane ▶ reacts with aqueous solutions of nitrite or gaseous nitrogen oxides to form N-nitrosomorpholine (NMOR) ▶ reacts with inorganic acids and acid gases such as CO₂, H₂S or HCN to form morpholine salts ▶ can react with oxidising agents, undergo direct chlorination, and form complexes with metallic halides ▶ reacts with carboxylic acids, anhydrides, chlorides and esters to form morpholides -alkyl morpholides are formed by reaction with alkyl halides, dialkyl sulfates, or trialkyl phosphates; the N-alkylmorpholides (N-methyl- and N-ethyl- morpholides) are used polyurethane catalysts ▶ reacts with formaldehyde to form N-formylmorpholine (a selective solvent for aromatic compound extraction) ▶ is incompatible with organic anhydrides, isocyanates, vinyl acetate, acrylates, substituted allyls, alkylene oxides, epichlorohydrin, ketones, aldehydes, alcohols, glycols, phenols, cresols, caprolactam solution, nitrocompounds, perchlorates ▶ reacts with fatty acids to form soaps used in household and automotive waxes and polishes ▶ reacts with sulfur and sulfur-containing compounds to produce vulcanising agents ▶ attacks copper, lead, tin, zinc, and their alloys, and some plastics, rubber and coatings <p>Contains a six-membered heterocyclic ring.</p> <p>Six-membered heterocycles can be described as pi-deficient. Substitution by electronegative groups or additional nitrogen atoms in the ring significantly increase the pi-deficiency. These effects also decrease the basicity.</p> <p>Electrophilic aromatic substitution is more difficult while nucleophilic aromatic substitution is facilitated.</p> <p>For morpholines:</p> <p>Morpholine undergoes most chemical reactions typical for other secondary amines, though the presence of the ether oxygen withdraws electron density from the nitrogen, rendering it less nucleophilic (and less basic) than structurally similar secondary amines such as piperidine.</p> <ul style="list-style-type: none"> ▶ Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates. ▶ Avoid contact with copper, aluminium and their alloys.
Hazard categories in accordance with Regulation (EC) No 2012/18/EU (Seveso III)	Not Available
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	Not Available

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
morpholine	Dermal 0.84 mg/kg bw/day (Systemic, Chronic) Inhalation 36 mg/m ³ (Local, Chronic) Inhalation 72 mg/m ³ (Local, Acute) Oral 0.3 mg/kg bw/day (Systemic, Chronic) *	0.163 mg/L (Water (Fresh)) 0.45 mg/L (Water - Intermittent release) 0.016 mg/L (Water (Marine)) 1.83 mg/kg sediment dw (Sediment (Fresh Water)) 0.183 mg/kg sediment dw (Sediment (Marine)) 0.269 mg/kg soil dw (Soil) 10 mg/L (STP)
diethylaminoethanol	Dermal 2.5 mg/kg bw/day (Systemic, Chronic) Inhalation 18.3 mg/m ³ (Systemic, Chronic) Inhalation 10.7 mg/m ³ (Local, Chronic)	0.062 mg/L (Water (Fresh)) 0.34 mg/L (Water - Intermittent release) 0.006 mg/L (Water (Marine)) 0.673 mg/kg sediment dw (Sediment (Fresh Water)) 0.067 mg/kg sediment dw (Sediment (Marine)) 0.098 mg/kg soil dw (Soil) 10 mg/L (STP)
cyclohexylamine	Dermal 0.4 mg/kg bw/day (Systemic, Chronic) Inhalation 5 mg/m ³ (Systemic, Chronic) Dermal 0.8 mg/kg bw/day (Systemic, Acute) Inhalation 8.2 mg/m ³ (Systemic, Acute) Dermal 0.2 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.6 mg/m ³ (Systemic, Chronic) * Oral 0.2 mg/kg bw/day (Systemic, Chronic) * Dermal 0.4 mg/kg bw/day (Systemic, Acute) * Oral 0.4 mg/kg bw/day (Systemic, Acute) *	0.016 mg/L (Water (Fresh)) 0.19 mg/L (Water - Intermittent release) 0.002 mg/L (Water (Marine)) 4.1 mg/kg sediment dw (Sediment (Fresh Water)) 0.41 mg/kg sediment dw (Sediment (Marine)) 0.805 mg/kg soil dw (Soil) 22.52 mg/L (STP)

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	morpholine	Morpholine	10 ppm / 36 mg/m ³	72 mg/m ³ / 20 ppm	Not Available	Sk
UK Workplace Exposure Limits (WELs).	cyclohexylamine	Cyclohexylamine	10 ppm / 41 mg/m ³	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
morpholine	30 ppm	1,300 ppm	8000** ppm
diethylaminoethanol	6 ppm	83 ppm	500 ppm
cyclohexylamine	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
morpholine	1,400 ppm	Not Available
diethylaminoethanol	100 ppm	Not Available
cyclohexylamine	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
diethylaminoethanol	C	> 1 to ≤ 10 parts per million (ppm)
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.	

8.2. Exposure controls

8.2.1. Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations.</p> <p>Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p>
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Continued...

	<p>Type of Contaminant:</p> <p>solvent, vapours, degreasing etc., evaporating from tank (in still air).</p> <p>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</p> <p>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</p> <p>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</p> <p>Within each range the appropriate value depends on:</p> <table border="1"> <tr> <td>Lower end of the range</td> <td>Upper end of the range</td> </tr> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>	Lower end of the range	Upper end of the range	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity	3: Intermittent, low production.	3: High production, heavy use	4: Large hood or large air mass in motion	4: Small hood-local control only	<p>Air Speed:</p> <p>0.25-0.5 m/s (50-100 f/min.)</p> <p>0.5-1 m/s (100-200 f/min.)</p> <p>1-2.5 m/s (200-500 f/min.)</p> <p>2.5-10 m/s (500-2000 f/min.)</p>
Lower end of the range	Upper end of the range											
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents											
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity											
3: Intermittent, low production.	3: High production, heavy use											
4: Large hood or large air mass in motion	4: Small hood-local control only											
8.2.2. Individual protection measures, such as personal protective equipment												
Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. ▶ Chemical goggles. Whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. [AS/NZS 1337.1, EN166 or national equivalent] ▶ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection. ▶ Alternatively a gas mask may replace splash goggles and face shields. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59]. 											
Skin protection	See Hand protection below											
Hands/feet protection	<ul style="list-style-type: none"> ▶ Elbow length PVC gloves ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. <p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. 											
Body protection	See Other protection below											
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. ▶ Ensure there is ready access to a safety shower. 											

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

EWS YT1000

Material	CPI
BUTYL	A
PVA	B
NATURAL RUBBER	C
NITRILE	C
VITON	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

Respiratory protection

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Ansell Glove Selection

Glove — In order of recommendation
AlphaTec® 15-554
AlphaTec® 38-612
AlphaTec® 53-001
AlphaTec® 58-005
AlphaTec® Solvex® 37-175
BioClean™ Emerald BENS
BioClean™ Extra BLAS
BioClean™ Fusion (Sterile) S-BFAP
BioClean™ N-Plus BNPS
BioClean™ Ultimate BUPPS

The suggested gloves for use should be confirmed with the glove supplier.

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AK-AUS P2	-	AK-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AK-AUS / Class 1 P2	-
up to 100 x ES	-	AK-2 P2	AK-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

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8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Colourless to brown solution		
Physical state	Liquid	Relative density (Water = 1)	0.99 @ 15.5°C
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	~12	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	65	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Combustible.	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.

Continued...

10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Inhaled	<p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. Inhalation of amine vapours may cause irritation of the mucous membrane of the nose and throat, and lung irritation with respiratory distress and cough. Swelling and inflammation of the respiratory tract is seen in serious cases; with headache, nausea, faintness and anxiety. Cases of temporary, whole-body toxic effects due to accidental industrial exposure to cyclohexylamine have been reported, with light-headedness, drowsiness, anxiety, apprehension and nausea. Workers exposed to 4-10 parts per million showed no ill effects. Prolonged overexposure to cyclohexylamine may cause headache, nausea, vomiting, fatigue, weakness, drowsiness and collapse. Severe overexposure may result in unconsciousness and coma. Extreme overexposure may result in death. High concentrations may cause lung swelling after a delay of several hours.</p> <p>Diethylaminoethanol (DEAE) vapour or mist can severely irritate the nose, throat and lungs and may cause sore throat, laryngitis, coughing, wheezing, shortness of breath, headache, nausea and vomiting.</p> <p>An odor threshold of 0.011 ppm (approx. 0.053 mg/m³) has been reported. In a laboratory worker short-time exposure to approx. 100 ppm (480 mg/m³) DEAE caused nausea and vomiting. Subjects exposed to DEAE vapor by humidified air in office buildings complained about eye, nose and throat irritation, dizziness, nausea and vomiting. Also several cases of asthma were observed. However, these symptoms were more consistent with reactive airway dysfunction syndrome (RADS) than with an allergic respiratory reaction. In one case detectable amounts of 2-diethylaminoethanol were 0.05 and 0.04 mg/m³.</p> <p>An attempt by a laboratory worker to remove animals from an inhalation chamber containing approximately 100 ppm resulted in nausea and vomiting within 5 minutes after a fleeting exposure.</p> <p>In rats repeated daily inhalation exposure at 500 ppm (+/- 10%) produced marked eye and nasal irritation on the first exposure day, mild tremors of the head and forelegs through to day 5 of the experiment with 4 of 20 animals fatally poisoned by day 5. Autopsy showed purulent bronchitis and bronchopneumonia but no other organ involvement.</p> <p>Exposure to the morpholine vapour may produce irritation to the nose and airway and liver damage. Very high vapour concentrations may be intensely irritating and may produce fluid accumulation in the lungs and kidney damage.</p>
Ingestion	<p>Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the oesophagus and stomach may experience burning pain; vomiting and diarrhoea may follow.</p> <p>The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.</p> <p>Amines without benzene rings when swallowed are absorbed throughout the gut. Corrosive action may cause damage throughout the gastrointestinal tract.</p> <p>Swallowing cyclohexylamine may cause burning of the mouth, throat and stomach with abdominal and chest pain, nausea, vomiting, diarrhea, thirst, weakness and collapse. Aspiration may occur during swallowing or vomiting, resulting in lung damage. Swallowing also causes headache, blurring of vision and shivering with a dose-dependent rise in blood pressure. Most cyclohexamine is excreted in the urine. Cyclohexamine may produce sympathetic-like effects (for example, increased heart rate), but it is unlikely that in industrial situations, exposure of a level sufficient to cause these effects would be encountered.</p> <p>The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia). Symptoms include cyanosis (a bluish discoloration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure.</p> <p>At about 15% concentration of blood methaemoglobin there is observable cyanosis of the lips, nose and earlobes. Symptoms may be absent although euphoria, flushed face and headache are commonly experienced. At 25-40%, cyanosis is marked but little disability occurs other than that produced on physical exertion. At 40-60%, symptoms include weakness, dizziness, lightheadedness, increasingly severe headache, ataxia, rapid shallow respiration, drowsiness, nausea, vomiting, confusion, lethargy and stupor. Above 60% symptoms include dyspnea, respiratory depression, tachycardia or bradycardia, and convulsions. Levels exceeding 70% may be fatal.</p>
Skin Contact	<p>The material can produce severe chemical burns following direct contact with the skin.</p> <p>Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Skin exposure to cyclohexylamine may cause pain, severe redness and swelling with chemical burns, blister formation and possible tissue destruction. Prolonged or widespread skin contact may result in the absorption of harmful or potentially fatal amounts. Exposure to a 25% solution of cyclohexylamine in water produced severe irritation and slight sensitization.</p> <p>Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep.</p> <p>Volatile amine vapours produce irritation and inflammation of the skin. Direct contact can cause burns.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Concentrated morpholine readily permeates the skin, although dilutions of 25% or less may cause less of a health hazard in relation to skin penetration.</p>
Eye	<p>If applied to the eyes, this material causes severe eye damage.</p> <p>Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.</p> <p>Vapours of volatile amines irritate the eyes, causing excessive secretion of tears, inflammation of the conjunctiva and slight swelling of the cornea, resulting in "halos" around lights. This effect is temporary, lasting only for a few hours. However this condition can reduce the efficiency of undertaking skilled tasks, such as driving a car. Direct eye contact with liquid volatile amines may produce eye damage, permanent for the lighter species.</p> <p>Eye contact with cyclohexylamine may cause pain, with excess blinking and tear production with marked excess redness and swelling of the eye and chemical burns.</p> <p>Eye contact with liquid diethylaminoethanol may cause severe pain, irritation, redness and corrosive injury. Blindness may result if not quickly treated. The vapour or mist may cause eye irritation and a minor temporary swelling of the surface of the cornea, which causes a visual effect</p>

	<p>called "blue haze".</p> <p>Exposure to low concentrations of morpholine vapour for several hours caused foggy vision with rings around lights which cleared within several hours after cessation of exposure.</p>
Chronic	<p>Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.</p> <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Based on experiments and other information, there is ample evidence to presume that exposure to this material can cause genetic defects that can be inherited.</p> <p>Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.</p> <p>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</p> <p>Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Long term exposure to morpholine and some related compounds may produce liver and kidney changes. Animal testing has shown evidence of chronic nose irritation and inflammation, and damage to the eye.</p> <p>Repeated skin contact with cyclohexylamine may cause a persistent irritation or skin inflammation. Repeated inhalation may cause lung damage.</p> <p>Repeated overexposure may aggravate existing liver or kidney disease and aggravate or enhance existing nervous system dysfunction produced by disorders known to cause nervous system damage, such as diabetes, alcohol or drug abuse, and Parkinson's disease. Cyclohexylamine has been mentioned as possibly causing bladder cancer in the past, but animal tests have not supported this. Exposed animals did display decreased food intake and organ weight, mild anaemia and atrophy of the testicles with reduction in sperm count.</p> <p>Secondary amines may react with nitrites to form potentially carcinogenic N-nitrosamines.</p> <p>Nitrosamine is formed by nitrosation of amines. Studies on experimental animals show that it has a damaging effect on organs (especially the oesophagus) which may progress to cancer. It is presumed to cause cancers until proven otherwise. Due to the ease with which it is generated in some commercial products, significant doses are unacceptable.</p> <p>There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.</p>

	TOXICITY	IRRITATION
EWS YT1000	Not Available	Not Available
morpholine	Dermal (rabbit) LD50: 500 mg/kg ^[2] Oral (Mouse) LD50; 525 mg/kg ^[2]	Eye (rabbit): 2 mg - SEVERE Skin (rabbit): 995 mg/24hr-SEVERE Skin (rabbit):500mg open-moderate
diethylaminoethanol	dermal (guinea pig) LD50: ~885 mg/kg ^[1] Inhalation(Mouse) LC50; 5 mg/L4h ^[2] Oral (Rat) LD50: 1300 mg/kg ^[2]	Eye (rabbit) : 5 mg - SEVERE Eye: adverse effect observed (irritating) ^[1] Skin (rabbit): 10 mg/24h - open Skin (rabbit): 500 mg-open - mild Skin: adverse effect observed (corrosive) ^[1]
cyclohexylamine	Dermal (rabbit) LD50: 277 mg/kg ^[2] Inhalation (Rat) LC50: >0.091 mg/l4h ^[1] Oral (Rat) LD50: 156 mg/kg ^[2]	Eye (rabbit): 0.05 mg/24h SEVERE Skin (human):125 mg/48h SEVERE Skin (rabbit): 2 mg/24h SEVERE Skin: adverse effect observed (corrosive) ^[1]

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

EWS YT1000	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p>
MORPHOLINE	<p>for morpholine:</p> <p>There have been no reports on incidents of acute poisoning or on the effects of short- or long-term exposure to morpholine by the general population. The phenomenon known as blue vision or glaucopsia, as well as some instances of skin and respiratory tract irritation, have been described in reports of occupational exposure to morpholine; however, no atmospheric concentrations of morpholine were given. It was reported that the number of chromosomal aberrations in the lymphocytes of peripheral blood of workers exposed for 3-10 years to morpholine at concentrations of 0.54-0.93 mg/m³ did not differ significantly from controls. Undiluted morpholine is strongly irritant to skin; a dilute solution (1 to 40) was mildly irritant. The potential carcinogenicity of morpholine in exposed human populations has not been investigated.</p> <p>Morpholine is absorbed after oral, dermal and inhalation exposure. In the rat following oral and intravenous administration, morpholine is rapidly distributed, the highest concentrations being found in the intestine and muscle. In the rabbit, following intravenous and inhalation exposure, morpholine is preferentially distributed to the kidneys, lower concentrations reaching the lung, liver and blood. Morpholine does not bind significantly to plasma proteins. Plasma half-lives have been reported to be 115 (rat), 120 (hamster), and 300 min (guinea-pig). Morpholine is excreted mainly via the renal route, as the unchanged compound, in a variety of species. One day after administration, 70-90% of morpholine was found in urine. Neutralisation of morpholine enhances the rate of excretion of the compound. A small percentage of morpholine is excreted in expired air and faeces. Studies in rats, mice, hamster and rabbit indicate that morpholine is eliminated almost completely as the unmetabolised compound. In the guinea-pig, N-methylation followed by N-oxidation can occur, with up to 20% of the administered dose being metabolized. In the presence of nitrite, morpholine can be converted to NMOR both <i>in vitro</i> and <i>in vivo</i>. Depending on the dose, 0-12% of morpholine administered to rats with nitrites may be nitrosated. Immunostimulation, involving macrophage activation, may increase the extent of nitrosation.</p>

	<p>Morpholine is not highly toxic under conditions of acute exposure. The LD50 after oral administration is 1-1.9 g/kg body weight in rats and 0.9 g/kg body weight in guinea-pigs. LC50 values of 7.8 mg/m³ (rats) and 4.9-6.9 g/m³ (mice) have been reported. In the conditions of short-term and long-term inhalation exposure, the critical effects appear to be irritation of the eyes and respiratory tract. A concentration of 90 mg/m³ may be considered the NOAEL in the conditions of the 13-week experiment in rats (6 h/day, 5 days/week). In a long-term inhalation study (104 weeks), increased incidences of inflammation of the cornea, and inflammation and necrosis of the nasal cavity were observed in rats at 540 mg/m³. Increased incidence of irritation of eyes and nose was also observed at 36 and 180 mg/m³. High exposures to morpholine causes severe damage to the liver and kidneys of rats and guinea-pigs. Fatty degeneration of the liver was reported in rats after feeding morpholine (0.5 g/kg body weight) daily for 56 days. When administered morpholine oleic acid salt in the drinking-water at a dose of about 0.7 g/kg body weight per day for 13 weeks, mice showed cloudy swelling of the kidney proximal tubules. Decreased body weight gain was observed in female mice in the long-term (672 days) feeding experiment at dose levels between 0.05 and 0.4 g morpholine (as oleic acid salt). At the reported levels of the present occupational and environmental exposures, morpholine does not seem to create any significant risk of systemic toxic effects. Local effects (irritation) of the eyes and respiratory tract may occur in non-controlled occupational and incidental exposures to high concentrations of airborne morpholine, and skin irritation may result from contact with liquid (even diluted) morpholine. Morpholine does not appear to be mutagenic or carcinogenic in animals. However, it can be easily nitrosated to form NMOR, which is mutagenic and carcinogenic in several species of experimental animals. Morpholine fed to rats sequentially with nitrite caused an increase in tumours, mostly hepatocellular carcinoma and sarcomas of the liver and lungs. It is therefore prudent to consider exposure to morpholine as increasing the carcinogenic risk in exposed populations.</p>
DIETHYLAMINOETHANOL	<p>Overexposure to most of these materials may cause adverse health effects.</p> <p>Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose. Whole-body symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, rapid heartbeat, itching, reddening of the skin, urticaria (hives) and swelling of the face, which are usually transient.</p> <p>There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing.</p> <p>Inhalation: Inhaling vapours may result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs. Higher concentrations of certain amines can produce severe respiratory irritation, characterized by discharge from the nose, coughing, difficulty in breathing and chest pain. Chronic exposure via inhalation may cause headache, nausea, vomiting, drowsiness, sore throat, inflammation of the bronchi and lungs, and possible lung damage. Repeated and/or prolonged exposure to some amines may result in liver disorders, jaundice and liver enlargement. Some amines have been shown to cause kidney, blood and central nervous system disorders in animal studies.</p> <p>While most polyurethane amine catalysts are not sensitizers, some certain individuals may also become sensitized to amines and my experience distress while breathing, including asthma-like attacks, whenever they are subsequently exposed to even very small amounts of vapours. Once sensitized, these individuals must avoid any further exposure to amines. Chronic overexposure may lead to permanent lung injury, including reduction in lung function, breathlessness, chronic inflammation of the bronchi, and immunologic lung disease.</p> <p>Products with higher vapour pressures may reach higher concentrations in the air, and this increases the likelihood of worker exposure.</p> <p>Inhalation hazards are increased when exposure to amine catalysts occurs in situations that produce aerosols, mists or heated vapours. Such situations include leaks in fitting or transfer lines. Medical conditions generally aggravated by inhalation exposure include asthma, bronchitis and emphysema.</p> <p>Skin contact: Skin contact with amine catalysts poses a number of concerns. Direct skin contact can cause moderate to severe irritation and injury, from simple redness and swelling to painful blistering, ulceration, and chemical burns. Repeated or prolonged exposure may also result in severe cumulative skin inflammation. Skin contact with some amines may result in allergic sensitization. Sensitized persons should avoid all contact with amine catalysts. Whole-body effects resulting from the absorption of the amines though skin exposure may include headaches, nausea, faintness, anxiety, decrease in blood pressure, reddening of the skin, hives, and facial swelling. These symptoms may be related to the pharmacological action of the amines, and they are usually temporary.</p> <p>Eye contact: Amine catalysts are alkaline and their vapours are irritating to the eyes, even at low concentrations. Direct contact with liquid amine may cause severe irritation and tissue injury, and the "burning" may lead to blindness. Contact with solid products may result in mechanical irritation, pain and corneal injury.</p> <p>Exposed persons may experience excessive tearing, burning, inflammation of the conjunctiva, and swelling of the cornea, which manifests as a blurred or foggy vision with a blue tint, and sometimes a halo phenomenon around lights. These symptoms are temporary and usually disappear when exposure ends. Some people may experience this effect even when exposed to concentrations that do not cause respiratory irritation.</p> <p>Ingestion: Amine catalysts have moderate to severe toxicity if swallowed. Some amines can cause severe irritation, ulcers and burns of the mouth, throat, gullet and gastrointestinal tract. Material aspirated due to vomiting can damage the bronchial tubes and the lungs. Affected people may also experience pain in the chest or abdomen, nausea, bleeding of the throat and gastrointestinal tract, diarrhea, dizziness, drowsiness, thirst, collapse of circulation, coma and even death.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p> <p>For diethylaminoethanol (DEAE): DEAE can cause irritation of the mucous membranes, apathy, and difficulty breathing. In animals, it is corrosive to skin, though not sensitizing. Animal testing suggests that repeated exposure may cause irritation of the airway, clouding of the cornea, and damage to the nose, liver and kidney. There is no evidence that DEAE causes mutations or genetic damage. Chronic exposure may cause shrinking of the testes. DEAE does not cause developmental toxicity or birth defects in animals, and has not been shown to cause cancer.</p>
EWS YT1000 & MORPHOLINE & DIETHYLAMINOETHANOL & CYCLOHEXYLAMINE	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p>
MORPHOLINE & DIETHYLAMINOETHANOL & CYCLOHEXYLAMINE	<p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>
MORPHOLINE & CYCLOHEXYLAMINE	<p>The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.</p> <p>The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.</p>

Acute Toxicity	✓	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legenda: ✗ – Data either not available or does not fulfil the criteria for classification
✔ – Data available to make classification

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

SECTION 12 Ecological information

12.1. Toxicity

EWS YT1000	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
morpholine	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	96h	Algae or other aquatic plants	28mg/l	1
	BCF	1008h	Fish	<0.3-0.65	7
	EC50	48h	Crustacea	44.5mg/l	2
	EC50	72h	Algae or other aquatic plants	9mg/l	2
	NOEC(ECx)	Not Available	Fish	>1mg/l	2
LC50	96h	Fish	>1mg/l	4	
diethylaminoethanol	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	96h	Algae or other aquatic plants	40.7mg/l	2
	BCF	672h	Fish	<0.61	7
	EC50	48h	Crustacea	83.6mg/l	1
	EC50	72h	Algae or other aquatic plants	28mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	5mg/l	2
LC50	96h	Fish	100mg/l	1	
cyclohexylamine	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	96h	Algae or other aquatic plants	20mg/l	1
	EC50	48h	Crustacea	36.3mg/l	2
	EC50	72h	Algae or other aquatic plants	29.3mg/l	2
	NOEC(ECx)	504h	Crustacea	1.6mg/l	2
LC50	96h	Fish	33mg/l	2	
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Harmful to aquatic organisms.

For diethylaminoethanol

log Kow : 0.21-0.46

BOD 76% after 20 days

ThOD 2.33 mg/mg (calculated)

DEAE is a colourless light yellowish organic liquid. The hygroscopic substance is miscible with water in all proportions, has a vapor pressure of about 1.8 hPa at 20 C. The density is 0.885 g/cm³. Melting point and boiling point are 68 C and 162-163 C (at 1013 hPa) respectively.

Environmental Fate: Diethylaminoethanol distributes mainly to the water (99.1 %).

A soil adsorption coefficient (Koc) of 5.98 was estimated for DEAE, suggesting that this compound would be mobile in soil and adsorption to suspended solids would not be important.

As it exists as a cation under environmental conditions, binding of the substance to the matrix of soils with high capacities for cation exchange (e.g. clay) cannot be excluded.

However, no data was available for ionic-ionic interactions in soil. As DEAE is completely soluble in water, volatilisation from water would not be an important fate process. The substance is readily biodegradable and has no considerable potential for bioaccumulation. The photodegradation rate in the atmosphere is fast under environmental conditions (50% after 3.9 hours).

Biodegradation:

Test method: OECD Guideline 302 B (aerobic), activated sludge, domestic

Degree of elimination: 96 % (14 d)

Test method: OECD 301 A (new version) (aerobic), activated sludge, domestic

Method of analysis: DOC reduction

Degree of elimination: 90 - 100 % (22 d)

Evaluation: Readily biodegradable (according to OECD criteria).

Bioaccumulation:

Accumulation in organisms is not to be expected

Ecotoxicity:

Fish LC50 (96 h): >100-220 mg/l (nominal concentration) (DIN 38412 Part 15 static)

Fish LC50 (96 h): Leuciscus idus 147 mg/l (nominal concentration)

The toxic effect may be (partly) due to the high pH of the non-neutralised test solutions, since the pH adjusted 1000 mg/l dose group tolerated the substance for 96 h without mortality.

Fish LC50 (96 h): 1780 mg/l (measured concentration, adjustment of pH)

Daphnia magna EC50 (48 h): 83.6 mg/l (nominal concentration) Directive 79/831/EEC

Daphnia magna: EC50 (48 h) = 83.6 mg/l (nominal concentration) (toxicity due to pH effects cannot be excluded)

Daphnia magna EC50 (48 h) = 165 mg/l (nominal concentration, adjustment of pH)

EWS YT1000

Algae EC50 (72 h): 30 mg/l, 44 mg/l (nominal concentration) DIN 38412 part 9
 Algae ErC50: Scenedesmus subspicatus 44 mg/l; NOEC 5 mg/l; EbC50 30 mg/l; NOEC 5 mg/l
 Activated sludge EC20 (30 m): >1000 mg/l (OECD 209 aquatic)

for morpholine:

log Kow: -1.08- -0.86

Koc: 8

Half-life (hr) air: 4

Henry's atm m³/mol: 1.41E-07

BOD 5: 0.02,0.9%

ThOD: 2.6

Environmental Fate: Morpholine is chemically stable in the biosphere although it is subject to chemical and biological nitrosation to N-nitosomorpholine (NMOR). Morpholine is inherently biodegradable. Morpholine seems to be degraded only by a restricted range of microbes, mostly Mycobacterium spp., which have specially adapted (acclimated) themselves to this substrate under specific conditions. In the absence of these organisms biodegradation is not likely to be significant.

While information on bioaccumulation of morpholine in aquatic and terrestrial organisms is scarce, no bioaccumulation is expected.

Morpholine is released into the environment through volatilisation. It is quickly adsorbed by moisture. The main compartment for accumulation of morpholine is therefore the hydrosphere. The limited data suggest that morpholine does not accumulate in the hydrosphere.

Photochemical Degradation: A half-life of less than one day has been calculated for morpholine. Direct photochemical degradation in the atmosphere or in the hydrosphere is unlikely. Physicochemical Degradation: Upon combustion in the presence of sufficient oxygen, carbon monoxide, carbon dioxide and nitrogen gases are produced. Combustion under oxygen-starved conditions can result in the production of carbon monoxide, hydrogen cyanide, nitriles, cyanic acid, isocyanates, cyanogens, nitrosamines, amides and carbamates. The rate of volatilisation of morpholine from water is dependent on the concentration of morpholine in the liquid phase.

Hydrolytic Degradation: Morpholine can thermally decompose at temperatures used in boiler steam cycles. At 316 C, morpholine decomposed in 12 h by 2-5% only, when used in boilers at 95 kg/cm² and 108 kg/cm², the decomposition products being ammonia and carbonic acid products.

Ecotoxicity: Among the aquatic organisms tested, certain cyanobacteria (Microcystis) and unicellular green algae (Scenedesmus) appear to be the most sensitive taxa as toxicity threshold values (criterion: inhibition of population growth) of 1.7 mg/litre for Microcystis and 4.1 mg/litre for Scenedesmus have been reported (duration of exposure: 8 days). Aerobic bacteria like Pseudomonas proved to be much more resistant: the 16-h toxicity threshold and the NOEC for population growth have been cited as 310 and 8700 mg/litre, respectively. However, 1000 mg/litre inhibited respiration and dehydrogenase activity (up to 20%) in activated sludge from industrial treatment plants. Among aquatic protozoans tested, representatives of the genera Entosiphon and Chilomonas (with threshold values of 12 and 18 mg/litre, respectively, for the inhibition of population growth) turned out to be the most sensitive. The 24-h EC values (E=immobilisation) for Daphnia were in the range of 100-120 mg/litre. The 48- to 96-h LC50 values reported for fish tested in fresh, brackish or seawater was > 180 mg/litre, rainbow trout being the most sensitive species.

Prevent, by any means available, spillage from entering drains or water courses.

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
morpholine	LOW	LOW
diethylaminoethanol	LOW	LOW
cyclohexylamine	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
morpholine	LOW (BCF = 2.8)
diethylaminoethanol	LOW (BCF = 6.1)
cyclohexylamine	LOW (LogKOW = 1.49)

12.4. Mobility in soil

Ingredient	Mobility
morpholine	LOW (Log KOC = 5.082)
diethylaminoethanol	LOW (Log KOC = 5.979)
cyclohexylamine	LOW (Log KOC = 40.37)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT	✘	✘	✘
vPvB	✘	✘	✘
PBT Criteria fulfilled?	No		
vPvB	No		

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

SECTION 13 Disposal considerations


13.1. Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. Otherwise: <ul style="list-style-type: none"> ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same
------------------------------	---

	<p>product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</p> <ul style="list-style-type: none"> ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product. ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible. ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▶ Treat and neutralise at an approved treatment plant. ▶ Treatment should involve: Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material). ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	2X

Land transport (ADR-RID)

14.1. UN number or ID number	3267	
14.2. UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (contains morpholine and cyclohexylamine)	
14.3. Transport hazard class(es)	Class	8
	Subsidiary Hazard	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Hazard identification (Kemler)	80
	Classification code	C7
	Hazard Label	8
	Special provisions	274
	Limited quantity	1 L
	Tunnel Restriction Code	E

Air transport (ICAO-IATA / DGR)

14.1. UN number	3267	
14.2. UN proper shipping name	Corrosive liquid, basic, organic, n.o.s. * (contains morpholine and cyclohexylamine)	
14.3. Transport hazard class(es)	ICAO/IATA Class	8
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	8L
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	A3 A803
	Cargo Only Packing Instructions	855
	Cargo Only Maximum Qty / Pack	30 L
	Passenger and Cargo Packing Instructions	851
	Passenger and Cargo Maximum Qty / Pack	1 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y840
	Passenger and Cargo Limited Maximum Qty / Pack	0.5 L

Sea transport (IMDG-Code / GGVSee)

14.1. UN number	3267
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EWS YT1000

14.2. UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (contains morpholine and cyclohexylamine)	
14.3. Transport hazard class(es)	IMDG Class	8
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	F-A , S-B
	Special provisions	274
	Limited Quantities	1 L

Inland waterways transport (ADN)

14.1. UN number	3267	
14.2. UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (contains morpholine and cyclohexylamine)	
14.3. Transport hazard class(es)	8	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	C7
	Special provisions	274
	Limited quantity	1 L
	Equipment required	PP, EP
	Fire cones number	0

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
morpholine	Not Available
diethylaminoethanol	Not Available
cyclohexylamine	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
morpholine	Not Available
diethylaminoethanol	Not Available
cyclohexylamine	Not Available

SECTION 15 Regulatory information

15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

morpholine is found on the following regulatory lists

Great Britain GB mandatory classification and labelling list (GB MCL)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

UK Workplace Exposure Limits (WELs).

diethylaminoethanol is found on the following regulatory lists

Great Britain GB mandatory classification and labelling list (GB MCL)

cyclohexylamine is found on the following regulatory lists

Great Britain GB mandatory classification and labelling list (GB MCL)

UK Workplace Exposure Limits (WELs).

Additional Regulatory Information

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Information according to 2012/18/EU (Seveso III):

Seveso Category	Not Available
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15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (morpholine; diethylaminoethanol; cyclohexylamine)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	13/03/2024
Initial Date	23/02/2023

Full text Risk and Hazard codes

H226	Flammable liquid and vapour.
H332	Harmful if inhaled.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Definitions and abbreviations

- ▶ PC - TWA: Permissible Concentration-Time Weighted Average
- ▶ PC - STEL: Permissible Concentration-Short Term Exposure Limit
- ▶ IARC: International Agency for Research on Cancer
- ▶ ACGIH: American Conference of Governmental Industrial Hygienists
- ▶ STEL: Short Term Exposure Limit
- ▶ TEEL: Temporary Emergency Exposure Limit,
- ▶ IDLH: Immediately Dangerous to Life or Health Concentrations
- ▶ ES: Exposure Standard
- ▶ OSF: Odour Safety Factor
- ▶ NOAEL: No Observed Adverse Effect Level
- ▶ LOAEL: Lowest Observed Adverse Effect Level
- ▶ TLV: Threshold Limit Value
- ▶ LOD: Limit Of Detection
- ▶ OTV: Odour Threshold Value
- ▶ BCF: BioConcentration Factors
- ▶ BEI: Biological Exposure Index
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration


- ▶ AIIC: Australian Inventory of Industrial Chemicals
- ▶ DSL: Domestic Substances List
- ▶ NDSL: Non-Domestic Substances List
- ▶ IECSC: Inventory of Existing Chemical Substance in China
- ▶ EINECS: European Inventory of Existing Commercial chemical Substances
- ▶ ELINCS: European List of Notified Chemical Substances
- ▶ NLP: No-Longer Polymers
- ▶ ENCS: Existing and New Chemical Substances Inventory
- ▶ KECI: Korea Existing Chemicals Inventory

- ▶ NZIoC: New Zealand Inventory of Chemicals
- ▶ PICCS: Philippine Inventory of Chemicals and Chemical Substances
- ▶ TSCA: Toxic Substances Control Act
- ▶ TCSI: Taiwan Chemical Substance Inventory
- ▶ INSQ: Inventario Nacional de Sustancias Químicas
- ▶ NCI: National Chemical Inventory
- ▶ FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Acute Toxicity (Oral) Category 4, H302	Expert judgement
Acute Toxicity (Dermal) Category 4, H312	Expert judgement
Skin Corrosion/Irritation Category 1B, H314	Expert judgement
Serious Eye Damage/Eye Irritation Category 1, H318	Expert judgement
Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H335	Expert judgement
Reproductive Toxicity Category 2, H361f	Expert judgement

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According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Crepetrol™ 9212 Creping Adhesive
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Creping adhesive aid for the tissue industry

<p>1.3 Details of the supplier of the safety data sheet Solenis Netherlands B.V. De Corridor 4 3621 ZB Breukelen Netherlands Tel: +31 30 247 6911</p> <p>Solenis UK Industries Limited P. O. Box 38, Cleckheaton Rd, Low Moor, Bradford, BD12 0JZ, United Kingdom</p> <p>E-mail address of person responsible for the SDS: EHSProductSafetyTeam@solenis.com</p> <p>Product Information Contact your local Solenis representative</p>	<p>1.4 Emergency telephone +1-302-502-0991 , or contact your local emergency telephone number at 112</p>
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Long-term (chronic) aquatic hazard,
Category 3

H412: Harmful to aquatic life with long lasting effects.

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2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard Statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P273 Avoid release to the environment.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labeling

EUH208 Contains mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.

2.3 Other hazards


This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
Polyethyleneimine, modified	114133-44-7	Aquatic Chronic 2; H411	>= 5 - < 10
HEXANEDIOIC ACID, POLYMER WITH N1-(2-AMINOETHYL)-1,2-ETHANEDIAMINE AND 2-(CHLOROMETHYL)OXIRANE	25212-19-5	Aquatic Chronic 3; H412	>= 2,5 - < 5
phosphoric acid	7664-38-2 231-633-2	Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318 specific concentration limit Skin Corr. 1B; H314	>= 1 - < 2,5

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		>= 25 % Skin Irrit. 2; H315 10 - < 25 % Eye Irrit. 2; H319 10 - < 25 %	
mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	55965-84-9	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 2; H310 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH071 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100 specific concentration limit Skin Corr. 1C; H314 >= 0,6 % Skin Irrit. 2; H315 0,06 - < 0,6 % Eye Irrit. 2; H319 0,06 - < 0,6 % Skin Sens. 1A; H317 >= 0,0015 % Eye Dam. 1; H318 >= 0,6 %	>= 0,0002 - < 0,0015

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

- General advice : No hazards which require special first aid measures.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing

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with soap and water.

In case of eye contact : Remove contact lenses.
Protect unharmed eye.

If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No hazards which require special first aid measures.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.


Hazardous combustion products : Oxides of phosphorus

5.3 Advice for firefighters

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities


Requirements for storage areas and containers : Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : No materials to be especially mentioned.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : No data available

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
phosphoric acid	7664-38-2	TWA	1 mg/m3	GB EH40
		STEL	2 mg/m3	GB EH40
		TWA	1 mg/m3	2000/39/EC
	Further information: Indicative			
		STEL	2 mg/m3	2000/39/EC
	Further information: Indicative			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Routes of exposure	Potential health effects	Value
phosphoric acid	Workers	Inhalation	Long-term local effects	2,92 mg/m3
Remarks:	Repeated dose toxicity			
	Workers	Inhalation	Long-term local effects	1 mg/m3
Remarks:	Repeated dose toxicity			
	Workers	Inhalation	Local, short-term	2 mg/m3
	General population	Inhalation	Long-term local effects	0,73 mg/m3
Remarks:	Repeated dose toxicity			


8.2 Exposure controls

Engineering measures

General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).
- Respiratory protection : No personal respiratory protective equipment normally required.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: liquid
Color	: yellow, opaque
Odor	: No data available
Odor Threshold	: No data available
pH	: 5,3
Melting point/freezing point	: 0 °C
Initial boiling point and boiling range	: 100 °C
Flash point	: Not applicable
Evaporation rate	: No data available
Flammability	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: 1,044 (25 °C)
Density	: No data available
Solubility(ies)	
Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: 51 mPa.s (20 °C) Method: Brookfield

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Viscosity, kinematic : No data available

Oxidizing properties : No data available

9.2 Other information

Particle size : No data available

Particle Size Distribution : No data available

Self-ignition : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid

Conditions to avoid : excessive heat


10.5 Incompatible materials

Materials to avoid : Fluorine
Metals
nitromethane
strong alkalis
Strong oxidizing agents
strong reducing agents
Sulfides
sulphites

10.6 Hazardous decomposition products

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
No hazardous decomposition products are known.
Oxides of phosphorus

SECTION 11: Toxicological information

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11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified based on available information.

Components:

Polyethyleneimine, modified:

Acute oral toxicity : LD50 (Rat): Expected > 2.000 - 5.000 mg/kg

Acute inhalation toxicity : LC 50 (Rat): Exposure time: 8 h
Test atmosphere: dust/mist

HEXANEDIOIC ACID, POLYMER WITH N1-(2-AMINOETHYL)-1,2-ETHANEDIAMINE AND 2-(CHLOROMETHYL)OXIRANE:

Acute oral toxicity : LD50 (Rat): 6.834 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 11,2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

phosphoric acid:

Acute oral toxicity : LD50 (Rat): ca. 2.600 mg/kg

Acute inhalation toxicity : Remarks: Corrosive to respiratory system.

Acute dermal toxicity : LD50 (Rabbit): 2.740 mg/kg

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):

Acute oral toxicity : LD50 (Rat): > 66 mg/kg

Acute inhalation toxicity : LC 50 (Rat): 0,33 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Remarks: Aerosol

Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): 141 mg/kg


Skin corrosion/irritation

Not classified based on available information.

Components:

Polyethyleneimine, modified:

Result : Not irritating to skin

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HEXANEDIOIC ACID, POLYMER WITH N1-(2-AMINOETHYL)-1,2-ETHANEDIAMINE AND 2-(CHLOROMETHYL)OXIRANE:

Result : Mildly irritating to skin

phosphoric acid:

Result : Causes burns.

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):

Species : Rabbit
Result : Corrosive to skin

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:

Polyethyleneimine, modified:

Result : Not irritating to eyes

HEXANEDIOIC ACID, POLYMER WITH N1-(2-AMINOETHYL)-1,2-ETHANEDIAMINE AND 2-(CHLOROMETHYL)OXIRANE:

Result : Mildly irritating to eyes

phosphoric acid:

Result : Corrosive to eyes

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):

Species : Rabbit
Result : Corrosive to eyes

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.


Respiratory sensitization

Not classified based on available information.

Components:

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):

Result : Probability or evidence of high skin sensitization rate in

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humans

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

11.2 Information on other hazards

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:


Polyethyleneimine, modified:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): Expected > 1 - 10 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

HEXANEDIOIC ACID, POLYMER WITH N1-(2-AMINOETHYL)-1,2-ETHANEDIAMINE AND 2-(CHLOROMETHYL)OXIRANE:

Toxicity to fish : LC50 (Fish): > 10 - 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Test conducted using environmentally representative water.

LC50 (Pimephales promelas (fathead minnow)): Expected > 10 - 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

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Remarks: In natural waters, aquatic toxicity is markedly reduced, due to neutralisation of cationic charge by adsorption to particles, hydrolysis and dissolved organic carbon.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): Expected > 10 - 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: In natural waters, aquatic toxicity is markedly reduced, due to neutralisation of cationic charge by adsorption to particles, hydrolysis and dissolved organic carbon.

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,19 mg/l
Exposure time: 96 h
LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,28 mg/l
Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,16 mg/l
Exposure time: 48 h
Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,027 mg/l
Exposure time: 72 h
M-Factor (Acute aquatic toxicity) : 100
Toxicity to microorganisms : EC50 (activated sludge): 4,5 mg/l
Test Type: Respiration inhibition
M-Factor (Chronic aquatic toxicity) : 100

12.2 Persistence and degradability

Components:


Polyethyleneimine, modified:

Biodegradability : Result: Not readily biodegradable.

HEXANEDIOIC ACID, POLYMER WITH N1-(2-AMINOETHYL)-1,2-ETHANEDIAMINE AND 2-(CHLOROMETHYL)OXIRANE:

Biodegradability : Result: Not readily biodegradable.

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):

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Biodegradability : Biodegradation: 30 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Not readily biodegradable.

12.3 Bioaccumulative potential

Components:

HEXANEDIOIC ACID, POLYMER WITH N1-(2-AMINOETHYL)-1,2-ETHANEDIAMINE AND 2-(CHLOROMETHYL)OXIRANE:

Partition coefficient: n-octanol/water : Remarks: No data available

mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no.247- 500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1):

Partition coefficient: n-octanol/water : log Pow: <= 0,71
Method: OECD Test Guideline 117

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.


SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.

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Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

ADR: Not dangerous goods

ADN: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.2 UN proper shipping name

ADR: Not dangerous goods

ADN: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.3 Transport hazard class(es)

ADR: Not dangerous goods

ADN: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.4 Packing group

ADR: Not dangerous goods

ADN: Not dangerous goods

RID: Not dangerous goods

IMDG-Code: Not dangerous goods

IATA-DGR: Not dangerous goods

14.5 Environmental hazards

ADR: Not applicable


ADN: Not applicable

RID: Not applicable

IMDG-Code: Not applicable

IATA-DGR: Not applicable

14.6 Special precautions for user

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The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

Regulation (EU) No 2024/590 on substances that deplete the ozone layer : Not applicable

UK REACH List of substances subject to authorisation (Annex XIV) : Not applicable

UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation : Not applicable

The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) : Not applicable


GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation : Not applicable

Control of Major Accident Hazards Regulations 2015 (COMAH) : Not applicable

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

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The ingredients of this product are reported in the following inventories:

TCSI	:	Not in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
AICC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory

15.2 Chemical Safety Assessment

No data available

SECTION 16: Other information

Further information

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Classification of the mixture:

Aquatic Chronic 3 H412

Classification procedure:


Calculation method

Full text of H-Statements

H290	:	May be corrosive to metals.
H301	:	Toxic if swallowed.
H310	:	Fatal in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H330	:	Fatal if inhaled.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Met. Corr.	:	Corrosive to Metals
Skin Corr.	:	Skin corrosion
Skin Sens.	:	Skin sensitization

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- 2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
- GB EH40 : UK. EH40 WEL - Workplace Exposure Limits
- 2000/39/EC / TWA : Limit Value - eight hours
- 2000/39/EC / STEL : Short term exposure limit
- GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)
- GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Material Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

GB / EN

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name

Cartasol Yellow RFN liq

Material number: 100905

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture

Industry sector : Manufacture of pulp, paper and paper products

Type of use : Auxiliary for the paper industry

1.3. Details of the supplier of the safety data sheet

Identification of the company

Archroma Management GmbH

Neuhofstrasse 11

4153 Reinach, Switzerland

Telephone no. : +41 61 716 3401

Information about the substance/mixture

Product Stewardship +41 61 716 3401

e-mail: PS.MSDS-Europe@archroma.com

1.4. Emergency telephone number

+49 69 2222 5285, +33 1 7211 0003, +39 0236 042 884 (24 h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according CLP regulation (Regulation (EC) No. 1272/2008, as amended)

Not a hazardous substance or mixture.

2.2. Label elements

Labelling according CLP regulation (Regulation (EC) No. 1272/2008, as amended)

Not a hazardous substance or mixture.

2.3. Other hazards

No additional hazards are known except those derived from the labelling.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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Chemical characterization

Direct dye
anionic

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Get medical advice/ attention if you feel unwell.

After inhalation

If inhaled, remove to fresh air.

After contact with skin

IF ON SKIN: Wash with plenty of soap and water.

After contact with eyes

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

After ingestion

If swallowed, call a poison control centre or doctor immediately.
Treat symptomatically.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms

No symptoms known currently.

Hazards

No hazards known at this time.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

all

Extinguishing media that must not be used for safety reasons

No restrictions

5.2. Special hazards arising from the substance or mixture

Carbon oxides
Nitrogen oxides (NO_x)
Sulphur oxides

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5.3. Advice for firefighters

Special protective equipment for firefighting

Self-contained breathing apparatus

Further information

Not combustible.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear suitable protective equipment.

6.2. Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

After processing, clean all equipment with the following:

Water

6.4. Reference to other sections

Additional information

Take up as such and consider recycling.

Do not let the liquid drain into rivers, ponds or sewer systems.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

No special measures necessary.

Hygiene measures

This preparation is classified as non-hazardous. However the usual precautions for handling chemicals must be observed to avoid contact with the skin, eyes and respiratory tract. In case of contact with the product, wash the eye immediately with running water and the skin with water and soap.

Advice on protection against fire and explosion

No special measures necessary.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions

Keep containers tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s)

No further recommendations.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values

Exposure limit values are not available.

DNEL/DMEL values

DNEL/DMEL values are not available.

PNEC values

PNEC values are not available.

8.2. Exposure controls

General protective measures

Observe the usual precautions for handling chemicals.

Respiratory protection : Breathing apparatus needed only when aerosol or mist is formed.

Hand protection : Use impermeable, CE-approved gloves for the manipulation of chemical products.
Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection : safety glasses/face shield

Body protection : working clothes

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state :	liquid (20 °C ; 1.013 hPa)
Form :	Aqueous solution
Particle size :	Not applicable
Colour :	yellow
Odour :	none
Odour threshold :	not tested.
pH value :	approximately 8 - 9 (20 °C)
Melting point :	Not applicable
Boiling point :	approximately 100 °C (1.013 hPa)
Sublimation point :	Not applicable
Flash point :	no flash point up to the boiling point > 100 °C
Evaporation rate :	not tested.

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Flammability :	Not applicable
Lower explosion limit :	Not applicable
Upper explosive limit :	Not applicable
Combustion number :	Not applicable
Minimum ignition energy :	not tested.
Burning rate :	Not applicable
Vapour pressure :	approx. 23 hPa (20 °C) Corresp. to vapour pressure of water
Vapour density relative to air :	not tested.
Relative Density:	not tested.
Solubility in water :	(20 °C) miscible
Octanol/water partition coefficient (log Pow) :	not tested.
Ignition temperature :	not tested.
Self-ignition temperature :	Method : Expert judgement The substance or mixture is not classified as self heating.
Thermal decomposition :	not tested.
Viscosity (dynamic) :	not tested.
Explosive properties :	Explosive according to EU supply regulations : Not explosive Method : Expert judgement
Oxidizing properties :	Type of oxidizing effect : The substance or mixture is not classified as oxidizing. Method : Expert judgement

9.2. Other information

Density :	1,12 g/cm ³ (20 °C, 1.013 hPa)
Surface tension :	not tested.
Specific resistance / electrical conductivity :	not tested.

SECTION 10: Stability and reactivity

10.1. Reactivity

See section 10.3. "Possibility of hazardous reactions"

10.2. Chemical stability

Stable under normal conditions.

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10.3. Possibility of hazardous reactions

none

10.4. Conditions to avoid

not known

10.5. Incompatible materials

not known

10.6. Hazardous decomposition products

When used and handled as intended, none.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information related to the product itself:

Acute oral toxicity :	LD50 > 5.000 mg/kg (Rat) Method : test result of the active component.
Acute dermal toxicity :	not tested.
Acute inhalation toxicity :	not tested.
Irritant effect on skin :	No skin irritation (Rabbit) Method : test result of the active component.
Irritant effect on eyes :	No eye irritation (Rabbit) Method : test result of the active component.
Sensitization :	None (Guinea pig) Method : estimated
Repeated dose toxicity:	not tested.
Genetic toxicity in vitro :	not tested.
Assessment of mutagenicity :	Contains no ingredient listed as a mutagen
Carcinogenicity :	not tested.
Assessment of carcinogenicity :	Contains no ingredient listed as a carcinogen
Developmental toxicity/teratogenicity :	not tested.
Toxicity to reproduction/fertility :	not tested.
Assessment of toxicity to reproduction :	No reproductive toxicity to be expected.
Assessment of teratogenicity :	No teratogenic effects to be expected.

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Specific target organ toxicity (STOT) - single exposure : not tested.

Specific target organ toxicity (STOT) - repeated exposure : not tested.

Aspiration hazard :
No data available

Remarks

The product has not been tested. The information is derived from the properties of the individual components.

SECTION 12: Ecological information

12.1. Toxicity

Information related to the product itself:

Fish toxicity : LC50 > 1.000 mg/l (96 h, Cyprinus carpio (Carp))
Method : test result of the active component according to OECD 203

Daphnia toxicity : EC50 > 1.000 mg/l (24 h, Daphnia magna (Water flea))
Method : test result of the active component according to OECD 202

Algae toxicity : not tested.

Bacteria toxicity : IC50 > 100 mg/l (activated sludge)
Method : test result of the active component according to OECD 209

Toxicity to soil-dwelling organisms : not tested.

Toxicity to terrestrial plants : not tested.

Toxicity to other environmentally relevant organisms : not tested.

12.2. Persistence and degradability

Information related to the product itself:

Physico-chemical eliminability : not tested.

Photodegradation : not tested.

Biodegradability : < 10 % (28 d, Dissolved organic carbon (DOC))
Not biodegradable
Method : test result of the active component according to OECD 302B

Dissolved Organic carbon (DOC) : not available

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Chemical oxygen demand (COD) : 210 - 260 mg/g
Method : DIN 38409-H-41

Biochemical oxygen demand (BOD5) : not available

12.3. Bioaccumulative potential

Information related to the product itself:

Bioaccumulation: not tested.

12.4. Mobility in soil

Information related to the product itself:

Behaviour in environmental compartments
No data available

12.5. Results of PBT and vPvB assessment

Information related to the product itself:

No data available

12.6. Other adverse effects

Information related to the product itself:

Additional ecotoxicological remarks

The product has not been tested. The information is derived from the properties of the individual components.

Product does not contain any organic bound Halogens which could lead to AOX-values.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product

Dispose of in accordance with local regulations.

Uncleaned packaging

Consider recycling.

Composition

C; H; N; Na; O; S

SECTION 14: Transport information

Section 14.1. to 14.5.

ADR	not restricted
ADN	not restricted
RID	not restricted
IATA	not restricted

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IMDG not restricted

14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code (International Bulk Chemicals Code)

No transport as bulk according IBC - Code.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Other regulations

European Directives relating to dangerous substances :67/548/EEC,76/769/EEC etc

15.2. Chemical safety assessment

No Chemical Safety Assessment (CSA) is yet available for the substance, or for the component substances, contained in this product.

SECTION 16: Other information

Legend

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AOX	Adsorbable organic bound halogens
CAS	Chemical Abstracts Service
DMEL	Derived Minimal Effect Level (genotoxic substances)
DNEL	Derived No Effect Level
EC50	Half maximal effective concentration
GHS	Globally Harmonized System
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MARPOL	International Convention for the Prevention of Pollution From Ships
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOEC	Non Observed Effect Concentration
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative, Toxic
PEC	Predicted Environmental Concentration
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals

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RID	International Rule for Transport of Dangerous Substances by Railway
SVHC	Substances of Very High Concern
vPvB	very Persistent and very Bioaccumulative

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Archroma makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Archroma's products for its particular application. Nothing included in this information waives any of Archroma's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Archroma products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Archroma.

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Bulab 9373



Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name Bulab 9373
Physical state Liquid.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Industry: Water treatment
Product use: Cooling water treatment

Uses advised against

None.

1.3 Details of the supplier of the safety data sheet

n.v. Buckman Laboratories
Wondelgemkaai 157
9000 Gent - **BELGIUM**
0032 (0)9 257 92 11

Distributor **Buckman Laboratories Ltd.**
Lancashire Gate - 21 Tiviot Dale
Stockport - Cheshire SK1 1TD - **UK**
0032 (0)9 257 92 11

e-mail address of person responsible for this SDS sds@buckman.com

1.4 Emergency telephone number

Supplier

Telephone number 0032 (0)9 257 93 00
Hours of operation 24/7

Product name:

Bulab 9373

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

Classification according to UK CLP/GHS

Skin Corr. 1B, H314

Eye Dam. 1, H318

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Causes severe skin burns and eye damage.

Precautionary statements

Prevention

Wear protective gloves, protective clothing and eye or face protection.

Response

IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

Not applicable.

Disposal

Not applicable.

Supplemental label elements

Not applicable.

2.3 Other hazards

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Mixture

Product/ingredient name	Identifiers	%	Classification	Type
potassium hydroxide	REACH #: 01-2119487136-33 EC: 215-181-3 CAS: 1310-58-3 Index: 019-002-00-8	<5	Met. Corr. 1, H290 Acute Tox. 4, H302 Skin Corr. 1A, H314 Eye Dam. 1, H318 See Section 16 for the full text of the H statements declared above.	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

Product name:

Bulab 9373

SECTION 3: Composition/information on ingredients

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Inhalation	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact	Adverse symptoms may include the following: pain watering redness
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	Adverse symptoms may include the following: stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
---------------------------	---

Product name:

Bulab 9373

SECTION 4: First aid measures

Specific treatments No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products Decomposition products may include the following materials:
metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Product name:

Bulab 9373

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations

Not available.

Industrial sector specific solutions

Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
potassium hydroxide	EH40/2005 WELs (United Kingdom (UK), 1/2020). STEL: 2 mg/m ³ 15 minutes.

Recommended monitoring procedures

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
potassium hydroxide; caustic potash	DNEL	Long term Inhalation	1 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	1 mg/m ³	General population [Consumers]	Local
	DNEL	Long term Inhalation	1 mg/m ³	General population	Local
	DNEL	Long term Inhalation	1 mg/m ³	Workers	Local

Product name:

Bulab 9373

SECTION 8: Exposure controls/personal protection

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: safety glasses with side-shields., face shield.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. 1 - 4 hours (breakthrough time): Recommended: Chemical-resistant gloves. (nitrile, neoprene, polyvinyl chloride (PVC), butyl rubber)

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear protective helmet with brim. Wear work clothing with long sleeves. Chemical-resistant protective suit.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear protective shoes.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state

Liquid. [Clear, yellow liquid]

Colour

Not available.

Odour

Not available.

Product name:

Bulab 9373

SECTION 9: Physical and chemical properties

Odour threshold	Not available.
Melting point/freezing point	-18°C
Initial boiling point and boiling range	Not available.
Flammability	Not available.
Lower and upper explosion limit	Not available.
Flash point	Closed cup: >100°C (>212°F)
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
pH	10.55
Viscosity	Dynamic: 0 to 20 mPa·s
Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not applicable.
Vapour pressure	Not available.
Relative density	Not available.
Density	1.27 to 1.29 g/cm ³ [25°C (77°F)]
Vapour density	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.
Particle characteristics	
Median particle size	Not applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	The product is stable.
10.3 Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	No specific data.
10.5 Incompatible materials	No specific data.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous combustion products : See Section 5.2 of the safety data sheet.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
potassium hydroxide	LD50 Oral	Rat	333 mg/kg Active ingredient: 50%	-

Product name:

Bulab 9373

SECTION 11: Toxicological information

Conclusion/Summary Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
potassium hydroxide	Eyes - Moderate irritant	Rabbit	-	24 hours 1 mg	-
	Skin - Severe irritant	Guinea pig	-	24 hours 50 mg	-
	Skin - Severe irritant	Human	-	24 hours 50 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 50 mg	-

Conclusion/Summary Not available.

Sensitisation

Conclusion/Summary Not available.

Mutagenicity

Conclusion/Summary Not available.

Carcinogenicity

Conclusion/Summary Not available.

Reproductive toxicity

Conclusion/Summary Not available.

Teratogenicity

Conclusion/Summary Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

Not available.

Potential acute health effects

- Inhalation** Causes serious eye damage.
- Ingestion** May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system.
- Skin contact** Causes severe burns.
- Eye contact** May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** Adverse symptoms may include the following:
pain
watering
redness
- Ingestion** No specific data.
- Skin contact** Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Eye contact** Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Product name:

Bulab 9373

SECTION 11: Toxicological information

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

Not available.

Conclusion/Summary Not available.

General No known significant effects or critical hazards.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Reproductive toxicity No known significant effects or critical hazards.

Other information Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
potassium hydroxide	Acute LC50 80 ppm Fresh water	-	96 hours

Conclusion/Summary Not available.

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Not available.			

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects No known significant effects or critical hazards.

Product name:

Bulab 9373

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste

The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

This preparation is not classified as dangerous according to international transport regulations (ADR/RID, IMDG or ICAO/IATA).

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

None of the components are listed.

None of the components are listed.

Substances of very high concern

None of the components are listed.

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Product name:

Bulab 9373

SECTION 15: Regulatory information

15.2 Chemical safety assessment

This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate
 GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = GB CLP-specific Hazard statement
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 SGG = Segregation Group
 vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Classification	Justification
Skin Corr. 1B, H314 Eye Dam. 1, H318	Calculation method Calculation method

Full text of abbreviated H statements

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

Full text of classifications

Acute Tox. 4	ACUTE TOXICITY - Category 4
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Met. Corr. 1	CORROSIVE TO METALS - Category 1
Skin Corr. 1A	SKIN CORROSION/IRRITATION - Category 1A
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B

Date of printing 1/2/2024

Date of issue/ Date of revision 12/8/2023

Date of previous issue 11/9/2022

Version 1.01

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

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Product name:

Bulab 9373

Bulab 9373



REGULATORY FACT SHEET

Food Contact

FDA - US Food And Drug Administration. CFR - Code of Federal Regulations Title 21 (version June 2023):

This product is not FDA approved.

BfR Recommendations on Food Contact Materials (Version February 2023):

This product is not BfR approved.

Contact Details

For Regulatory content questions, please contact the Regulatory Affairs team on the e-mail address sds@buckman.com

For questions about the materials of construction, please contact the Field Equipment Team EMEA on the e-mail address FieldEquipmentDep_EMEA@buckman.com.

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Version	1.01
Validated by	Regulatory Affairs Team and Field Equipment Team of Buckman EMEA.

This document can be considered as an official statement
This version supersedes any version issued before this date.

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2022

Version number 4 (replaces version 3)

Revision: 27.10.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: BIM DC 3896 M

1.2 Relevant identified uses of the substance or mixture and uses advised against

Only for use in the pulp and paper industry.

Application of the substance / the mixture Organic deposit control

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

BIM United Kingdom Ltd
Prince Street
BOLTON
BL1 2NP
UNITED KINGDOM
Tel: +44 1204 366 997

Further information obtainable from:

Environmental and Regulatory Affairs department. era@bimkemi.com

1.4 Emergency telephone number:

UK: BIM UK Ltd
+44 1204 366 997 (Office hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified, according to the GB CLP regulation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

Additional information:

Contains reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.

Safety data sheet available on request.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2022

Version number 4 (replaces version 3)

Revision: 27.10.2022

Trade name: BIM DC 3896 M

(Contd. of page 2)

5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide

5.3 Advice for firefighters

Protective equipment: No special measures required.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

The usual precautionary measures are to be adhered to when handling chemicals.

6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

The usual precautionary measures are to be adhered to when handling chemicals.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Store only in the original receptacle.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: None.

Storage class: 12

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters**

Ingredients with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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Safety data sheet

according to 1907/2006/EC, Article 31

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Revision: 27.10.2022

Trade name: BIM DC 3896 M

(Contd. of page 3)

8.2 Exposure controls

Individual protection measures, such as personal protective equipment

General protective and hygienic measures:

Immediately remove all soiled and contaminated clothing

Do not eat or drink while working.

The usual precautionary measures are to be adhered to when handling chemicals.

Wash hands before breaks and at the end of work.

Respiratory protection: Not necessary if room is well-ventilated.

Hand protection



Protective gloves

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye/face protection Safety glasses

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Physical state	Fluid
Colour:	Clear
Odour:	No available information.
Odour threshold:	Not determined.
Melting point/freezing point:	Undetermined.
Boiling point or initial boiling point and boiling range	Undetermined.
Flammability	Not applicable.
Lower and upper explosion limit	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	Not applicable.

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2022

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Trade name: BIM DC 3896 M

(Contd. of page 4)

Decomposition temperature:	Not determined.
pH	Not determined.
Viscosity:	
Kinematic viscosity	Not determined.
Dynamic at 25 °C:	1000 - 1,500 mPas
Solubility	
water:	Fully miscible.
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure:	Not determined.
Density and/or relative density	
Density:	Not determined.
Relative density	Not determined.
Vapour density	Not determined.

9.2 Other information

Appearance:
Form: Liquid

Important information on protection of health and environment, and on safety.
Auto-ignition temperature: Product is not selfigniting.

Explosive properties: Product does not present an explosion hazard.

Change in condition
Evaporation rate Not determined.

Information with regard to physical hazard
classes

Explosives	Void
Flammable gases	Void
Aerosols	Void
Oxidising gases	Void
Gases under pressure	Void
Flammable liquids	Void
Flammable solids	Void
Self-reactive substances and mixtures	Void
Pyrophoric liquids	Void
Pyrophoric solids	Void
Self-heating substances and mixtures	Void
Substances and mixtures, which emit flammable gases in contact with water	Void
Oxidising liquids	Void

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2022

Version number 4 (replaces version 3)

Revision: 27.10.2022

Trade name: BIM DC 3896 M

(Contd. of page 5)

Oxidising solids	Void
Organic peroxides	Void
Corrosive to metals	Void
Desensitised explosives	Void

SECTION 10: Stability and reactivity

10.1 Reactivity The product is non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability Stable under normal conditions.

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions No dangerous reactions known.

10.4 Conditions to avoid No further relevant information available.

10.5 Incompatible materials: Reacts with oxidising agents.

10.6 Hazardous decomposition products:

No decomposition if used and stored according to specifications.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Additional toxicological information:

The product is not classified as hazardous to health according to Regulation (EC) No. 1272/2008 (GB CLP).

11.2 Information on other hazards

Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

The product is not classified as hazardous to the environment according to Regulation (EC) No. 1272/2008 (GB CLP).

12.2 Persistence and degradability biodegradable

12.3 Bioaccumulative potential Bioaccumulation not likely.

12.4 Mobility in soil No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

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Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 4 (replaces version 3)

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Trade name: BIM DC 3896 M

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vPvB: Not applicable.

12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation Disposal must be made according to official regulations.

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN number or ID number

ADR, ADN, IMDG, IATA not regulated

14.2 UN proper shipping name

ADR, ADN, IMDG, IATA not regulated

14.3 Transport hazard class(es)

ADR, ADN, IMDG, IATA
Class not regulated

14.4 Packing group

ADR, IMDG, IATA not regulated

14.5 Environmental hazards:

Marine pollutant: No

14.6 Special precautions for user

Not applicable.

14.7 Maritime transport in bulk according to

IMO instruments Not applicable.

UN "Model Regulation":

not regulated

GB

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 27.10.2022

Version number 4 (replaces version 3)

Revision: 27.10.2022

Trade name: BIM DC 3896 M

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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet has been drawn up in compliance with EC Regulation No. 1907/2006.

Directive 2012/18/EU

Named dangerous substances - ANNEX I None of the ingredients is listed.

15.2 Chemical safety assessment: No chemical safety assessment is required for this product.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

- H301 Toxic if swallowed.
- H310 Fatal in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H330 Fatal if inhaled.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

Recommended restriction of use

If the mixture contains substances (present above the thresholds given in Article 14 of UK REACH) for which an exposure scenario is required, relevant information from the exposure scenarios is included in the different sections of this safety data sheet.

Department issuing SDS: Environmental and Regulatory Affairs department.

Contact:

Environmental and Regulatory Affairs department.
era@bimkemi.com

Abbreviations and acronyms:

- IARC: International Agency for Research on Cancer
- NTP: National Toxicology Program (USA)
- OSHA: Occupational Safety and Health Administration (USA)
- ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)

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Safety data sheet
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Printing date 27.10.2022

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Trade name: BIM DC 3896 M

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PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 2: Acute toxicity – Category 2

Skin Corr. 1C: Skin corrosion/irritation – Category 1C

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1A: Skin sensitisation – Category 1A

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

-GB-

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.10.2022

Version number 3 (replaces version 2)

Revision: 10.10.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: BIM CP 5072

1.2 Relevant identified uses of the substance or mixture and uses advised against

Only for use in the pulp and paper industry.

Application of the substance / the mixture Core pick up adhesive

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

BIM United Kingdom Ltd
Prince Street
BOLTON
BL1 2NP
UNITED KINGDOM
Tel: +44 1204 366 997

Further information obtainable from:

Environmental and Regulatory Affairs department. era@bimkemi.com

1.4 Emergency telephone number:

UK: BIM UK Ltd
+44 1204 366 997 (Office hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified, according to the GB CLP regulation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

Additional information:

Contains reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1). May produce an allergic reaction.

Safety data sheet available on request.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.10.2022

Version number 3 (replaces version 2)

Revision: 10.10.2022

Trade name: BIM CP 5072

(Contd. of page 1)

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Polymer dispersion

Dangerous components:

55965-84-9	reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	< 0.0015%
	Acute Tox. 3, H301; Acute Tox. 2, H310; Acute Tox. 2, H330; Skin Corr. 1C, H314; Eye Dam. 1, H318; Aquatic Acute 1, H400 (M=100); Aquatic Chronic 1, H410 (M=100); Skin Sens. 1A, H317	
	Specific concentration limits: Skin Corr. 1C; H314: C ≥ 0.6 %	
	Skin Irrit. 2; H315: 0.06 % ≤ C < 0.6 %	
	Eye Dam. 1; H318: C ≥ 0.6 %	
	Eye Irrit. 2; H319: 0.06 % ≤ C < 0.6 %	
	Skin Sens. 1A; H317: C ≥ 0.0015 %	

Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: Immediately remove any clothing soiled by the product.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Rinse out mouth and then drink plenty of water.

If symptoms persist consult doctor.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.10.2022

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Revision: 10.10.2022

Trade name: BIM CP 5072

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5.2 Special hazards arising from the substance or mixture No further relevant information available.**5.3 Advice for firefighters****Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

The usual precautionary measures are to be adhered to when handling chemicals.

6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.**6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

The usual precautionary measures are to be adhered to when handling chemicals.

Information about fire - and explosion protection: No special measures required.**7.2 Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** None.**Storage class:** 12**7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters**Ingredients with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

8.2 Exposure controls**Individual protection measures, such as personal protective equipment****General protective and hygienic measures:**

Wash hands before breaks and at the end of work.

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Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 3 (replaces version 2)

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Trade name: BIM CP 5072

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The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: Not necessary if room is well-ventilated.

Hand protection



Protective gloves

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye/face protection Safety glasses

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Physical state	Fluid
Colour:	Hazy
Odour:	Characteristic
Odour threshold:	Not determined.
Melting point/freezing point:	Undetermined.
Boiling point or initial boiling point and boiling range	Undetermined.
Flammability	Not applicable.
Lower and upper explosion limit	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	Not applicable.
Decomposition temperature:	Not determined.
pH at 25 °C	7-10
Viscosity:	
Kinematic viscosity	Not determined.
Dynamic at 25 °C:	2,400-2,600 mPas

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Solubility

water:	Fully miscible.
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure:	Not determined.
Density and/or relative density	
Density:	Not determined.
Relative density	Not determined.
Vapour density	Not determined.

9.2 Other information**Appearance:**
Form: Liquid

Important information on protection of health and environment, and on safety.
Auto-ignition temperature: Product is not selfigniting.

Explosive properties: Product does not present an explosion hazard.

Solvent content:
Solids content: 17-21 %

Change in condition
Evaporation rate Not determined.

Information with regard to physical hazard classes

Explosives	Void
Flammable gases	Void
Aerosols	Void
Oxidising gases	Void
Gases under pressure	Void
Flammable liquids	Void
Flammable solids	Void
Self-reactive substances and mixtures	Void
Pyrophoric liquids	Void
Pyrophoric solids	Void
Self-heating substances and mixtures	Void
Substances and mixtures, which emit flammable gases in contact with water	Void
Oxidising liquids	Void
Oxidising solids	Void
Organic peroxides	Void
Corrosive to metals	Void

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.10.2022

Version number 3 (replaces version 2)

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Trade name: BIM CP 5072

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Desensitised explosives

Void

SECTION 10: Stability and reactivity

10.1 Reactivity The product is non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability Stable under normal conditions.

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions No dangerous reactions known.

10.4 Conditions to avoid No further relevant information available.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous decomposition products:

No decomposition if used and stored according to specifications.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Additional toxicological information:

The product is not classified as hazardous to health according to Regulation (EC) No. 1272/2008 (GB CLP).

11.2 Information on other hazards

Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

The product is not classified as hazardous to the environment according to Regulation (EC) No. 1272/2008 (GB CLP).

12.2 Persistence and degradability No further relevant information available.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.10.2022

Version number 3 (replaces version 2)

Revision: 10.10.2022

Trade name: BIM CP 5072

(Contd. of page 6)

12.7 Other adverse effects

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation Disposal must be made according to official regulations.

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN number or ID number

ADR, ADN, IMDG, IATA not regulated

14.2 UN proper shipping name

ADR, ADN, IMDG, IATA not regulated

14.3 Transport hazard class(es)

ADR, ADN, IMDG, IATA

Class not regulated

14.4 Packing group

ADR, IMDG, IATA not regulated

14.5 Environmental hazards:

Marine pollutant: No

14.6 Special precautions for user

Not applicable.

14.7 Maritime transport in bulk according to

IMO instruments Not applicable.

UN "Model Regulation":

not regulated

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.10.2022

Version number 3 (replaces version 2)

Revision: 10.10.2022

Trade name: BIM CP 5072

(Contd. of page 7)

This safety data sheet has been drawn up in compliance with EC Regulation No. 1907/2006.

Directive 2012/18/EU**Named dangerous substances - ANNEX I** None of the ingredients is listed.**15.2 Chemical safety assessment:** No chemical safety assessment is required for this product.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H301 Toxic if swallowed.

H310 Fatal in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Recommended restriction of use

If the mixture contains substances (present above the thresholds given in Article 14 of UK REACH) for which an exposure scenario is required, relevant information from the exposure scenarios is included in the different sections of this safety data sheet.

Department issuing SDS: Environmental and Regulatory Affairs department.**Contact:**

Environmental and Regulatory Affairs department.

era@bimkemi.com

Abbreviations and acronyms:

IARC: International Agency for Research on Cancer

NTP: National Toxicology Program (USA)

OSHA: Occupational Safety and Health Administration (USA)

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 2: Acute toxicity – Category 2

Skin Corr. 1C: Skin corrosion/irritation – Category 1C

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Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 13.10.2022

Version number 3 (replaces version 2)

Revision: 10.10.2022

Trade name: BIM CP 5072

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Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1A: Skin sensitisation – Category 1A

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

*** Data compared to the previous version altered.**

GB

Bubreak 4243



Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name Bubreak 4243
Physical state Liquid.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Industry: Paper
Product use: Defoamer

Uses advised against

None.

1.3 Details of the supplier of the safety data sheet

n.v. Buckman Laboratories

Wondelgemkaai 157
9000 Gent - **BELGIUM**
0032 (0)9 257 92 11

Distributor

Buckman Laboratories Ltd.
Lancashire Gate - 21 Tiviot Dale
Stockport - Cheshire SK1 1TD - **UK**
0032 (0)9 257 92 11

e-mail address of person responsible for this SDS sds@buckman.com

1.4 Emergency telephone number

Supplier

Telephone number 0032 (0)9 257 93 00

Date of issue/Date of revision	: 12/8/2023	Date of previous issue	: 11/9/2022	Version	: 1.01	1/11
Date of printing	: 12/21/2023					

Product name:

Bubreak 4243

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Hours of operation 24/7

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

Classification according to UK CLP/GHS

Not classified.

The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word No signal word.

Hazard statements No known significant effects or critical hazards.

Precautionary statements

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal Not applicable.

Supplemental label elements Contains reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.
Safety data sheet available on request.

2.3 Other hazards

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures Mixture

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training.

Date of issue/Date of revision : 12/8/2023 Date of previous issue : 11/9/2022 Version : 1.01 2/11
Date of printing : 12/21/2023

Product name:

Bubreak 4243

SECTION 4: First aid measures

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
For emergency responders	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Date of issue/Date of revision	: 12/8/2023	Date of previous issue	: 11/9/2022	Version	: 1.01	3/11
Date of printing	: 12/21/2023					

Product name:

Bubreak 4243

SECTION 6: Accidental release measures

Small spill

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations

Not available.

Industrial sector specific solutions

Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Recommended monitoring procedures Not applicable.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Date of issue/Date of revision	: 12/8/2023	Date of previous issue	: 11/9/2022	Version	: 1.01	4/11
Date of printing	: 12/21/2023					

Product name:

Bubreak 4243

SECTION 8: Exposure controls/personal protection

Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: safety glasses with side-shields.
Skin protection	
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 1 - 4 hours (breakthrough time): Recommended: Chemical-resistant gloves. (nitrile, neoprene, polyvinyl chloride (PVC), butyl rubber)
Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear protective helmet with brim. Wear work clothing with long sleeves.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Wear protective shoes.
Respiratory protection	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Liquid. [emulsion]
Colour	Milky white
Odour	Not available.
Odour threshold	Not available.
Melting point/freezing point	0°C
Initial boiling point and boiling range	100°C (212°F)
Flammability	Not available.
Lower and upper explosion limit	Not available.
Flash point	Closed cup: >200°C (>392°F)
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
pH	7 to 10
Viscosity	Dynamic: 150 to 450 mPa·s
Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not applicable.
Vapour pressure	Not available.
Relative density	Not available.

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SECTION 9: Physical and chemical properties

Density	0.945 to 0.975 g/cm ³ [25°C (77°F)]
Vapour density	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.
Particle characteristics	
Median particle size	Not applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	The product is stable.
10.3 Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	No specific data.
10.5 Incompatible materials	No specific data.
10.6 Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous combustion products : See Section 5.2 of the safety data sheet.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Bubreak 4243	LD50 Dermal	Rat	>2000 mg/kg	-

Conclusion/Summary Not available.

Irritation/Corrosion

Conclusion/Summary Not available.

Sensitisation

Conclusion/Summary Not available.

Mutagenicity

Conclusion/Summary Not available.

Carcinogenicity

Conclusion/Summary Not available.

Reproductive toxicity

Conclusion/Summary Not available.

Teratogenicity

Conclusion/Summary Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

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SECTION 11: Toxicological information

Not available.

Information on likely routes of exposure Not available.

Potential acute health effects

Inhalation No known significant effects or critical hazards.

Ingestion No known significant effects or critical hazards.

Skin contact No known significant effects or critical hazards.

Eye contact No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation No specific data.

Ingestion No specific data.

Skin contact No specific data.

Eye contact No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

Not available.

Conclusion/Summary Not available.

General No known significant effects or critical hazards.

Carcinogenicity No known significant effects or critical hazards.

Mutagenicity No known significant effects or critical hazards.

Reproductive toxicity No known significant effects or critical hazards.

Other information Not available.

SECTION 12: Ecological information

12.1 Toxicity

Conclusion/Summary Not available.

12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Bubreak 4243	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Not available.			

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SECTION 12: Ecological information

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available.

Mobility Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

14.6 Special precautions for user **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

This preparation is not classified as dangerous according to international transport regulations (ADR/RID, IMDG or ICAO/IATA).

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

None of the components are listed.

None of the components are listed.

Substances of very high concern

None of the components are listed.

None of the components are listed.

Ozone depleting substances

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SECTION 15: Regulatory information

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

15.2 Chemical safety assessment This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate
GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = GB CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
SGG = Segregation Group
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Not classified.

Full text of abbreviated H statements

Not applicable.

Full text of classifications

Not applicable.

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REGULATORY FACT SHEET

Food Contact

FDA - US Food And Drug Administration. CFR - Code of Federal Regulations Title 21 (version June 2023):

The product is compliant with the following chapters:

§ 176.170 - Components of paper and paperboard in contact with aqueous and fatty foods.

§ 176.180 - Components of paper and paperboard in contact with dry food.

Limitations:

The use of this product cannot exceed the amounts reasonably required to accomplish the intended technical effect.

BfR Recommendations on Food Contact Materials (Version February 2023):

The product is compliant with the following chapters:

XXXVI: Paper and board for food contact.

XXXVI/2: Paper and Paperboard for Baking Purposes.

Limitations:

max. 0.4 %, based on dry fibres weight

Ecolabel

Nordic Swan

The product has been registered on My Swan Account, the online database of Nordic Ecolabelling.

The product is compliant with Nordic Ecolabelling of Paper Products - Chemical Module Version 2.3

EU - Flower

The product is compliant with EU flower ecolabel for tissue paper (2019/70/EU)

The product is compliant with EU flower ecolabel for copying and graphic paper (2019/70/EU)

The product is compliant with EU flower ecolabel for printed paper (2012/481/EU)

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