



TR PC 5440

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## Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

### SECTION 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product name **TR PC 5440**

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

Intended use Processing aids. Industrial use  
Uses advised against Uses other than those stated.

#### 1.3. Details of the supplier of the Information sheet

Name **MARE DYNAMICS S.R.L.**  
Full address **Via delle Molina 69/A**  
District and Country **I-51012 Pescia Pistoia**  
**ITALY**

**Tel. +39 0572 427208**

**Fax. +39 0572 427208**

e-mail address of the competent person

responsible for the Information Sheet **dynamics@mare.com**

#### 1.4. Emergency telephone number

For urgent inquiries refer to **+39 0572 427208 - MARE DYNAMICS S.R.L.**

### SECTION 2. Hazards identification

#### 2.1. Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP). However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2015/830.

Hazard classification and indication: --

#### 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms: --

Signal words: --

Hazard statements: --

Supplemental information:

**EUH066** Repeated exposure may cause skin dryness or cracking.  
**EUH210** Safety data sheet available on request.

Precautionary statements: --

#### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.



### SECTION 3. Composition/information on ingredients

#### 3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
<b>HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, &lt; 2% AROMATICS</b>		
CAS -	$20 \leq x \leq 30$	Asp. Tox. 1 H304, EUH066
EC 920-107-4		
INDEX -		
Reg. no. 01-2119453414-43-xxxx		
<b>ISOTRIDECANOL, ETHOXYLATED</b>		
CAS 69011-36-5	$1 \leq x < 5$	Acute Tox. 4 H302, Eye Dam. 1 H318
CE		
INDEX -		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

### SECTION 4. First aid measures

#### 4.1. Description of first aid measures

**EYES:** Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

**SKIN:** Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

**INHALATION:** Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

**INGESTION:** Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

**PROTECTIVE MEASURES FOR THE FIRST RESCUE WORKERS:** for PPE (personal protection equipment) required for first aid refer to section 8.2 of this safety data sheet.

#### 4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

### SECTION 5. Firefighting measures

#### 5.1. Extinguishing media

**SUITABLE EXTINGUISHING EQUIPMENT**

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

**UNSUITABLE EXTINGUISHING EQUIPMENT**

None in particular.



## 5.2. Special hazards arising from the substance or mixture

### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Ammonia, carbon oxides (CO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>). Hydrogen chloride (hydrogen cyanide) can be produced in case of combustion in an oxygen deficient atmosphere.

Do not breathe combustion products.

## 5.3. Advice for firefighters

### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1 For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Do not touch or walk through spilled material. Wear appropriate respirator when ventilation is inadequate.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe /mist/vapour/aerosol. Avoid leakage of the product into the environment.

Non-emergency personnel must follow the appropriate internal procedures in case of accidental release.

#### 6.1.2 For emergency responders

Block the leakage if there is no hazard. Evacuate unprotected and untrained personnel from hazard area. Wear suitable protective equipment. (see Section 8 of this Safety data sheet)

Follow the appropriate internal procedures in case of accidental release.

Keep fumes and vapours under control. Isolate hazard area and deny entry. Ventilate closed spaces before entering. Send away individuals who are not suitably equipped.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

**7.2. Conditions for safe storage, including any incompatibilities**

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

**7.3. Specific end use(s)**

No use other than as indicated in section 1.2 of this safety data sheet.

**SECTION 8. Exposure controls/personal protection****8.1. Control parameters**

## Regulatory References:

GBR	United Kingdom	EH40/2005 Workplace exposure limits (Third edition, published 2018)
EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2019

**Hazardous decomposition products****HYDROCHLORIC ACID****Valore limite di soglia**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
WEL	GBR	2	1	8	5	
OEL	EU	8	5	15	10	
TLV-ACGIH				2,9 (C)	2 (C)	

**AMMONIA****Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
WEL	GBR	18	25	25	35	
OEL	EU	14	20	36	50	
TLV-ACGIH		17	25	24	35	

**HYDROGEN CYANIDE****Threshold Limit Value**

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
OEL	EU	1	0,9	5	4,5	skin
WEL	GBR	4,5	1	5	4,5	skin
TLV-ACGIH					4,7 (C)	skin

**Legend:**

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

**8.2. Exposure controls**

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

**HAND PROTECTION**

Protect hands with category III work gloves (see standard EN 374).

Main recommended materials: PVC

The final choice of materials for work gloves must take into account: compatibility, degradation, time to failure, and permeation.

In the case of compounds, the resistance of work gloves to the chemical agents is unpredictable and must be checked before use. The useful life of work gloves depends on duration and form of use.

Thermal hazards: wear heat-resistant gloves if there is a risk of burns.

**SKIN PROTECTION**

Wear category I professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

**EYE PROTECTION**

Wear airtight protective goggles (see standard EN 166).

**RESPIRATORY PROTECTION**

Use a mask with a type B filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

**ENVIRONMENTAL EXPOSURE CONTROLS**

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Appearance	Viscous liquid
Colour	Milky
Odour	Aliphatic
Odour threshold	Not available
pH	3.5 - 6.5 (5 g/L)
Melting point / freezing point	< 5 °C
Initial boiling point / Boiling range	> 100 °C
Flash point	Not available
Evaporation Rate	Not available
Flammability of solids and gases	Not applicable on the basis of the physical state
Lower inflammability limit	Not available



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Upper inflammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapour pressure	2.3 kPa at 20°C
Vapour density	0.804 g/l at 20°C
Relative density	1.0 - 1.2
Solubility	Fully miscible in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	>150°C
Viscosity	< 2000 cPs (25°C)
Explosive properties	Non-explosive. There are no chemical groups associated with explosive properties present in the mixture
Oxidising properties	Non-oxidising. There are no chemical groups associated with oxidizing properties present in the molecule

## 9.2. Other information

Information not available

## SECTION 10. Stability and reactivity

### 10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

### 10.2. Chemical stability

The product is stable in normal conditions of use and storage.

### 10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.  
Exothermic reactions can occur in contact with oxidizing agents.

### 10.4. Conditions to avoid

Protect from frost, heat and sunlight.

### 10.5. Incompatible materials

Oxidizing agents.

### 10.6. Hazardous decomposition products

Ammonia, carbon oxides (COx), nitrogen oxides (NOx). Hydrogen chloride (hydrogen cyanide).



## SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

### 11.1. Information on toxicological effects

#### ACUTE TOXICITY

LC50 (Inhalation) of the mixture: Not classified (no significant component)

LD50 (Oral) of the mixture: Not classified (no significant component)

LD50 (Dermal) of the mixture: Not classified (no significant component)

#### HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS

Method: equivalent or similar to OECD 401

Reliability (Klimisch score): 1

Species: rat (Sprague-Dawley; Male / Female)

Routes of exposure: oral

Results: LD50 > 5000 mg / kg

Method: equivalent or similar to OECD 403

Reliability (Klimisch score): 1

Species: rat (Crj CD (SD); Male / Female)

Routes of exposure: inhalation (vapors)

Results: LC50 > 4.951 mg / l 4h

Method: equivalent or similar to OECD 402

Reliability (Klimisch score): 2

Species: rabbit (New Zealand White; Male / Female)

Routes of exposure: dermal

Results: LD50 > 5000 mg / kg

#### ISOTRIDECANOL, ETHOXYLATED

DL50 rat (oral): > 300 - 2.000 mg/kg (OECD- 423)

DL50 rat (dermal): > 2.000 mg/kg (OECD - 402)

#### SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

Repeated exposure may cause skin dryness or cracking.

#### HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS

Method: equivalent or similar to OECD 404

Reliability (Klimisch score): 1

Species: rabbit (New Zealand White)

Routes of exposure: dermal

Results: non-irritating

#### SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

Mixture test:

Method: OECD 437

Results: not irritating to the eyes.

#### HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS

Method: equivalent or similar to OECD 405

Reliability (Klimisch score): 1

Species: rabbit (New Zealand White)

Exposure routes: ocular



Results: non-irritating

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

Skin sensitization

HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS

Method: equivalent or similar to OECD 406

Reliability (Klimisch score): 2

Guinea pig species (Hartley; Female)

Routes of exposure: dermal

Results: non-sensitizing

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS

Method: OECD 471 - In vitro test

Reliability (Klimisch score): 1

Species: S. typhimurium

Results: negative with and without metabolic activation

Method: equivalent or similar to OECD 474 - In vivo test

Reliability (Klimisch score): 1

Species: mouse (CD-1; Male / Female)

Routes of exposure: oral

Results: negative

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS

Method: equivalent or similar to OECD 453

Reliability (Klimisch score): 1

Species: rat (F344 / N Male / Female)

Routes of exposure: inhalation (Vapors)

NOAEC results (female):> = 2200 mg / m3

Results NOAEC (male): 138 mg / m3

The substance is not classified for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Adverse effects on sexual function and fertility

HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS

Method: equivalent or similar to OECD 413

Reliability (Klimisch score): 1

Species: Rat (Fischer 344 Male / Female)

Routes of exposure: inhalation (vapors)

NOAEC results:> = 400 ppm

The substance is not classified for this hazard class

Adverse effects on development of the offspring

HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS

Method: Guidelines for Reproduction Studies for Safety and Evaluation of Drugs for Human Use, Segment II

Reliability (Klimisch score): 1

Species: Rat (Sprague-Dawley)

Exposure routes: Inhalation (vapors)

Results: negative. NOAEC (development)> = 1575 mg / m3. NOAEC (maternal)> = 1575 mg / m3

**STOT - SINGLE EXPOSURE**

Does not meet the classification criteria for this hazard class

**HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS**

Based on the available data, the substance has no specific toxicity effects for target organs for single exposure.

**STOT - REPEATED EXPOSURE**

Does not meet the classification criteria for this hazard class

**HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS**

Method: equivalent or similar to OECD 408

Reliability (Klimisch score): 1

Species: rat (Sprague-Dawley; Male / Female)

Routes of exposure: oral

Results: negative. NOAEL > = 5000 mg / kg body weight / day

Method: equivalent or similar to OECD 413

Reliability (Klimisch score): 1

Species: rat (albino; male / female)

Routes of exposure: inhalation (vapors)

Results: negative. NOAEC > 10400 mg / m<sup>3</sup>

**ASPIRATION HAZARD**

Does not meet the classification criteria for this hazard class

Viscosity: >20.5 mm<sup>2</sup>/s a 40°C

**HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS**

For petroleum products with a viscosity of less than 20.5 mm<sup>2</sup> / s at 40 ° C a specific risk is related to the aspiration of the fluid in the lungs which can be verified directly after ingestion, or subsequently in the case of vomiting, spontaneous or provoked .

**SECTION 12. Ecological information**

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

**12.1. Toxicity****HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS**

EL50(96h)- Fish > 1000 mg/L *Oncorhynchus mykiss* (OECD 203)

NOERL(28d)- Fish > 1000 mg/l *Oncorhynchus mykiss* ((Q)SAR)

EL50(48h)- Crustacea > 1000 mg/L *Daphnia magna* (OECD 202)

NOELR(21d)- Crustacea > 1000 *Daphnia magna* ((Q)SAR)

EL50(72h)- Algae / Aquatic Plants *Pseudokirchneriella subcapitata* > 1000 mg/L (OECD 201)

NOELR(72h)- Algae / Aquatic Plants *Pseudokirchneriella subcapitata* > 1000 mg/l (OECD 201)

EL50(48h)- Microorganisms > 1000 mg/l *Tetrahymena pyriformis* ((QSAR)

**ISOTRIDECANOL, ETHOXYLATED**

Fish LC50 *Caprynus carpio*: 1-10 mg/l/96h (OECD 203)

Crustacea EC50: *Daphnia* : 1-10 mg/l /48h (OECD 202)

NOEC: *Daphnia magna* : >1 mg/l/21 d (OECD 202)

Algae IC50: *Desmodesmus subspicatus*: 1-10 mg/l/72h (OECD 201)

Microorganisms EC10: activated sludge: >10000 mg/l/17h (DIN 37412-8)

**12.2. Persistence and degradability****HYDROCARBONS, C12-C15, N-ALKANES, ISOALKANES, CYCLICS, < 2% AROMATICS**

Rapidly degradable, 89.8% in 28 days (OECD 301 F)

**ISOTRIDECANOL, ETHOXYLATED**

Rapidly degradable, >60% in 28 days(OECD 301 B)

**12.3. Bioaccumulative potential**

Information not available

**12.4. Mobility in soil**

Information not available

**12.5. Results of PBT and vPvB assessment**

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

**12.6. Other adverse effects**

Information not available

**SECTION 13. Disposal considerations****13.1. Waste treatment methods**

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.

The hazards of the wastes containing this product shall be evaluated according to applicable regulations. (Directive 2008/98/EC as modified by subsequent amendments and transpositions into national law).

Disposal must be performed by an authorised waste management enterprise in compliance with national and local regulations.

The legal responsible for disposal is the producer / holder of the waste.

Different EWC codes could be applied to this mixture according to the European Waste Catalogue based on the specific circumstances that generated the waste, possible alterations and / or possible contamination.

The product as such, contained in the original packaging, or poured into in an appropriate recipient for disposal, or contained in a damaged packaging after an accidental leakage, shall be classified with a EWC code that is matching the description of the use shown at section 1.2.

The suitable final destination of the waste shall be evaluated by the producer on the basis of the chemical-physical characteristics of the waste, the compatibility with the authorized facility to which it will be provided for recovery, and the definitive treatment or disposal according to the procedures established by regulations in force.

Disposal through wastewater discharge is not permitted.

**CONTAMINATED PACKAGING**

Contaminated packaging, properly labelled, shall be sent to recovery or disposal in compliance with national waste management regulations and they shall be classified with the following EWC code:

15 01 01: paper and cardboard packaging

15 01 02: plastic packaging

15 01 03: wooden packaging

15 01 04: metallic packaging

15 01 05: composite packaging

15 01 06: mixed packaging

15 01 07: glass packaging

15 01 09: textile packaging

**SECTION 14. Transport information**

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

**14.1. UN number**

Not applicable

**14.2. UN proper shipping name**

Not applicable

**14.3. Transport hazard class(es)**

Not applicable

**14.4. Packing group**

Not applicable

**14.5. Environmental hazards**

Not applicable

**14.6. Special precautions for user**

Not applicable

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Information not relevant

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**Seveso Category - Directive 2012/18/EC:

None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

None

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Information not available

**15.2. Chemical safety assessment**

A chemical safety assessment has not been performed for the mixture.

**SECTION 16. Other information**

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>Eye Dam. 1</b>	Serious eye damage, category 1



<b>Asp. Tox. 1</b>	Aspiration hazard, category 1
<b>H302</b>	Harmful if swallowed.
<b>H304</b>	May be fatal if swallowed and enters airways.
<b>H318</b>	Causes serious eye damage.
<b>EUH066</b>	Repeated exposure may cause skin dryness or cracking.

## LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

## GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
  2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
  3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
  4. Regulation (EU) 2015/830 of the European Parliament
  5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
  6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
  7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
  8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
  9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
  10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
  11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
  12. Regulation (EU) 2016/1179 (IX Atp. CLP)
  13. Regulation (EU) 2017/776 (X Atp. CLP)
  14. Regulation (EU) 2018/669 (XI Atp. CLP)
  15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
  16. Regulation (EU) 2019/521 (XII Atp. CLP)
- The Merck Index. - 10th Edition
  - Handling Chemical Safety
  - INRS - Fiche Toxicologique (toxicological sheet)
  - Patty - Industrial Hygiene and Toxicology
  - N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
  - IFA GESTIS website



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- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

**Note for the recipient of the Information Sheet (IS):**

The recipient of this IS shall make sure of reading and understanding the information included by all people who handle, store, use, or otherwise come into contact in any way with the substance or mixture to which this IS is referred to. In particular, the recipient shall provide adequate training to the personnel for the use of substances and/or mixtures. The recipient shall verify the suitability and completeness of the provided information according to the specific use of the substance or mixture. However, the substance or mixture referred to by this IS shall not be used for uses other than those specified in Section 1. The Supplier don't assume responsibility for improper uses. Since the use of the product does not fall under the direct control of the Supplier, the user shall, under his own responsibility, fulfill national and EU regulations concerning health and safety.

The information included in this IS are provided in good faith and are based on the current state of scientific and technical knowledge, at the revision date indicated, available to the Supplier indicated in Section 1 of this IS. It shall not be meant that the IS is a guarantee of any specific property of the substance or mixture. The information concern only to the substance or mixture specifically designated in Section 1 and it could not be valid for the substance or mixture used in combination with other materials or in any process not specified in the text. This version of the IS substitutes all the previous versions.

Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 04 / 05 / 06 / 07 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 15 / 16.