

1.0 PURPOSE

This outlines what is in place to control odours and prevent odours from impacting on the community and employees. It is a requirement that we comply with our Site Permit and avoid odour issues from impacting our neighbours and therefore our business.

2.0 SCOPE

This document is intended to provide guidance to on-site personnel regarding the control measures used for prevention of odours escaping into atmosphere, relating to the handling/use and storage of materials.

3.0 DEFINITIONS / DEFINITIONS

Odour - the property of a substance that gives it a characteristic scent or smell

4.0 RESPONSIBILITIES

The HSE Manager or Site Manager is responsible to follow up and investigate any complaints and if required to report to the Environmental Agency. All Managers have the responsibility of ensuring employees follow the requirements when dealing with potential VOCs.

5.0 EQUIPMENT TO BE USED.**6.0 PERSONAL PROTECTIVE EQUIPMENT**

As per site requirements

7.0 PROCEDURE**7.1 Complaint handling**

In the unlikely event of an employee or neighbour complaining of an odour, the HSE Manager or Site Manager shall immediately investigate the complaint.

The following process will take place:-

7.1a Identify the complainant to determine type of smell, frequency of detection, intensity, duration of smell, offensiveness and if possible (location) receptor sensitivity.

7.1b Wind direction at the time of the complaint – obtain information to determine wind direction

7.1c Determine if there have been any other complaints

7.1d Review our internal goat patrol records to see if any odours have been recorded

7.1e The complaint will be logged using our Accident / Incident form – a full investigation shall be completed and corrective action followed up to ensure identified root causes are closed out.

7.1f We shall liaise with interested and affected parties to promote good open relationships and they will be considered before closing off the complaint to ensure they are satisfied with the action taken

	DETAILS	DATE
OK FOR PUBLIC REGISTER	L.C.	24.7.14
COPIED TO PUBLIC REGISTER	JB	EDRM

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7.2 Organic Vapour Emissions

Point Sources (vents, stacks) –list of release points.

- EP1- Resin. Scrubber from reactor vessel in resin plant – the scrubber is irrigated with potassium hydroxide which absorbs solvent vapours as they pass through.
- EP6. Scrubber from letdown tanks and the ethyl acrylate bulk storage tank. The scrubber is irrigated with potassium hydroxide which removes solvent vapours from releases to atmosphere.
- Two vents in paint plant – one vent (EP1-Paint) releasing displacement emissions from all fixed vessels and one Local exhaust vent (LEV) releasing fugitive emissions drawn from the area.
- Tank farm/bulk storage tank release vents. All vents freely displace solvents emissions to atmosphere during delivery.
- Tanker fill points x 5
- Laboratory – extraction vent

7.3 Controls in place to prevent odour emission

Fugitive VOC emissions can potentially arise from the following sources; Flanges/Pumps/Valves & Seals/Tanker Connections/ Sample Points/ Filling and Emptying Raw Materials Containers / Collection & Disposal of Liquid Waste/Accidental Spills.

Receipt and management of odorous materials

Ethyl Acrylate is received in tankers and transferred into the ethyl acrylate tank via a non drip connection so ensuring no spills or possible ethyl acrylate odours impacting on employees and the community.

Transfer of odorous chemicals to air

Largest demands on the scrubber are essentially during periods of simultaneous activities. See tables below following analysis and corrective action taken.

As a result the following actions must not take place simultaneously.

1. Charging of DMEA Tank (Typically down after upgrade determinations for batch manufacture but variance with CM0759B & CM0564A Decants)
2. Charging of Monos Tank (Typically during first spike)
3. Solvent Reflux (Full Solvent & Midi Wash)
4. Vacuum Drying of Reactor

Improvement Actions Instigated

1. Nitrogen Pressure at TK Press out reduced after 80% discharged, flow switched off. Exit Pressure reduced from 8-10 psi to 3-5 psi.
2. Reflux Return line drained after each batch prior to press out
3. Receiver tank empties on Regular basis, limits risk of discharge of vapours during Vac Drying Process
4. Limit time of over run of pump during manual charging of monomers (to clear line, but also risk associated displacing monomer vapour in head space).
5. Time reduced back to a maximum of 5 minutes when blowing back Methacrylic Acid Line back to Tank
6. Time reduced back to a maximum of 5 minutes when blowing back WE0215P Storage Tanks.

7.4 Measures to control fugitive emissions;

Finished product is slowly bottom filled into tankers over a period of 3-4 hours to minimise VOCs releases.

- Accidental spills are kept to a minimum through a combination of operator training and procedures which control the handling of materials onsite.
- All operators are required to place lids on containers where solvents are stored (raw materials, finished product & waste) when not in use.
- Drums and IBCs of liquid waste are securely fastened to prevent fugitive emissions during storage.
- Seaweed based product is used for floor cleaning instead of solvent based products which releases VOCs.
- A bulk storage system for ethyl acrylate has been installed instead of IBCs/drums where fugitive emissions are released. The bulk storage tank is connected to a scrubber which removes ethyl acrylate from the emissions.
- At the design stage the number of required valves and flanges are considered so that a conscious effort is made to keep these to the absolute minimum for the required purpose. This approach reduces the potential for releases of fugitive VOC emissions.
- The Resin Plant does a twice daily perimeter walkabout to detect odours and any security issues. They walk the perimeter fence. Any odour /or security issues should be reported to the Management immediately.

7.5 Engaging our neighbours

If our neighbours are impacted by our activities we will setup regular communication channels to ensure any impact our business is having on them will be resolved in a satisfactory manner. We will respond to all complaints promptly and take remedial action as soon as possible. All complaints will be recorded on FOR-155 and followed up to completion and closure within a short time frame as is possible.

8.0 RELATED DOCUMENTS.

FOR-155 Accident and Incident Report Form
FOR -042 Resin Plant - Environmental Checks
FOR-161 Record of site perimeter patrol

9.0 RECORDS OF AMMENDMENTS

Date	Revision No.	Details of Change / Reason
29/11/2013	Rev1	1 st issue into Valspar Management Systems
11/04/2014	Rev2	Updated to incorporate further details

Largest Demands on Scrubber essentially during periods of simultaneous Activities
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Following Activities Must NOT be performed simultaneously

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|--|
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Improvement Actions Instigated

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| 1. Nitrogen Pressure at TK Press Out reduced after 80% discharged, flow switched off. Exit Pressure reduced from 8-10 psi to 3-5 psi. |
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| 3. Reciever Tank empties on Regular basis, limits risk of discharge of vapours during Vac Drying Process |
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| 6. Time reduced back to a maximum of 5 minutes when blowing back WE0215P Storage Tanks. |

Reactor WE021SP Process

CM0759B

Charge Epoxy

Charge Serbic,BPA, Catalyst and Cover Solvent.

Heat to 115 Deg.C

Exotherm

Upgrade &

Kill

Wash

Butanol

Initiate

Charge

Monomer Hold

Spikes

Press Out

Charge

Heat

Hold at

Cool &

Cool &

Improvement Action: Implemented N2 Supply off at 80% transfer & reflux line drained

Improvement Action: Implemented Unit time 5min

Full Solvent Wash During Reflux

Monomer

Meth Acid Charge & Blow Back

Ethyl Acrylate

Manual Monomer Charge Pump Over-run

Blow Lines Nitrogen

Transfer to Storage

Cooling

Hold

Hot Water Acid

Amine Add & Hold

Initial Water Add

Initial High Speed Stir

Improvement Action: Implemented Unit time 5min

Improvement Action: Implemented Unit time 5min

Considered Highest Demands on Scrubber

Considered medium demand on Scrubber

TK Process(Following Press Out)

CM0759B

DMEA Prep

Vac Drying of Reactor

Full Solvent Wash During Reflux

TK Process(Following Press Out)

Initial High Speed Stir

Initial Water Add

5

5

Amine Add & Hold

15

Hot Water Add

35

Hold

120

Cooling

400

Transfer to Storage

120

Blow Lines Nitrogen

10

Manual Monomer Charge Pump Over-run

25

Ethyl Acrylate

10

Meth Acid Charge & Blow Back

15

Monomer

50

Improvement Action: Implemented Unit time 5min

Improvement Action: Implemented Unit time 5min

Considered Highest Demands on Scrubber

Considered medium demand on Scrubber



Need to consider simultaneous actions on Plant
Monomer Preparation normally completed within Spike Process
DMEA Preparation during Upgrade/Kill Solvent add.

