

SAFETY DATA SHEET



Crystic VE679 PA (Thix HV)

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

1.1 Product identifier

Product name : Crystic VE679 PA (Thix HV)
Product code : R5072600
Product description : Not available.
Product type : Liquid.
Other means of identification : Not available.

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

Identified uses

Resins.

Uses advised against

Not applicable.

1.3 Details of the supplier of the safety data sheet

Scott Bader Co Ltd,
Wollaston.
Northants
NN297RL
United Kingdom
+44 (0)1933663100

e-mail address of person responsible for this SDS : SDS@scottbader.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : +44 1865 407333 (NCEC) 24h

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to UK CLP/GHS

Flam. Liq. 3, H226
Acute Tox. 4, H332
Skin Irrit. 2, H315
Eye Irrit. 2, H319
Skin Sens. 1, H317
Repr. 2, H361d
STOT SE 3, H335
STOT RE 1, H372 (hearing organs)
Aquatic Chronic 3, H412

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

Ingredients of unknown toxicity : 1.5 percent of the mixture consists of component(s) of unknown acute oral toxicity
1.5 percent of the mixture consists of component(s) of unknown acute dermal toxicity
1.5 percent of the mixture consists of component(s) of unknown acute inhalation toxicity

SECTION 2: Hazards identification

Ingredients of unknown ecotoxicity : Contains 1.5% of components with unknown hazards to the aquatic environment

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 :

- H226 - Flammable liquid and vapour.
- H315 - Causes skin irritation.
- H317 - May cause an allergic skin reaction.
- H319 - Causes serious eye irritation.
- H332 - Harmful if inhaled.
- H335 - May cause respiratory irritation.
- H361d - Suspected of damaging the unborn child.
- H372 - Causes damage to organs through prolonged or repeated exposure. (hearing organs)
- H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention : Obtain special instructions before use. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. Do not breathe vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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SECTION 2: Hazards identification

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
styrene	REACH #: 01-2119457861-32 EC: 202-851-5 CAS: 100-42-5 Index: 601-026-00-0	≥25 - ≤50	Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT SE 3, H335 STOT RE 1, H372 (hearing organs) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
ethyl acetate	REACH #: 01-2119475103-46 EC: 205-500-4 CAS: 141-78-6 Index: 607-022-00-5	≤0.3	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066	[1] [2]
propane-1,2-diol	REACH #: 01-2119456809-23 EC: 200-338-0 CAS: 57-55-6	≤0.3	Not classified.	[2]
cobalt bis(2-ethylhexanoate)	REACH #: 01-2119524678-29 EC: 205-250-6 CAS: 136-52-7	<0.3	Eye Irrit. 2, H319 Skin Sens. 1A, H317 Repr. 1B, H360F Aquatic Acute 1, H400 (M=1) Aquatic Chronic 3, H412	[1] [2]
N,N-dimethylaniline	REACH #: 01-2119950342-44 EC: 204-493-5 CAS: 121-69-7 Index: 612-016-00-0	≤0.2	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Carc. 2, H351 Aquatic Chronic 2, H411	[1] [2]
triphenylphosphine	REACH #: 01-2119475464-32 EC: 210-036-0 CAS: 603-35-0	≤0.3	Acute Tox. 4, H302 Skin Sens. 1B, H317 STOT RE 2, H373 (central nervous system (CNS), peripheral nervous system) (inhalation)	[1]
2,2' -oxybisethanol	REACH #: 01-2119457857-21 EC: 203-872-2 CAS: 111-46-6 Index: 603-140-00-6	≤0.1	Acute Tox. 4, H302	[1] [2]
1,2,4-trimethylbenzene	EC: 202-436-9 CAS: 95-63-6 Index: 601-043-00-3	≤0.1	Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[1] [2]
1-methoxy-2-propanol	REACH #: 01-2119457435-35 EC: 203-539-1	≤0.1	Flam. Liq. 3, H226 STOT SE 3, H336	[1] [2]

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SECTION 3: Composition/information on ingredients

ethanol	CAS: 107-98-2 Index: 603-064-00-3 REACH #: 01-2119457610-43 EC: 200-578-6 CAS: 64-17-5 Index: 603-002-00-5	≤0.1	Flam. Liq. 2, H225 Eye Irrit. 2, H319	[1] [2]
1,4-naphthoquinone	EC: 204-977-6 CAS: 130-15-4	<0.1	Acute Tox. 3, H301 Acute Tox. 1, H330 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)	[1]
(2-methoxymethylethoxy)propanol	REACH #: 01-2119450011-60 EC: 252-104-2 CAS: 34590-94-8	≤0.1	Not classified.	[2]
1,4-dihydroxybenzene	REACH #: 01-2119524016-51 EC: 204-617-8 CAS: 123-31-9 Index: 604-005-00-4	<0.1	Acute Tox. 4, H302 Eye Dam. 1, H318 Skin Sens. 1B, H317 Muta. 2, H341 Carc. 2, H351 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1)	[1] [2]
Paraffin waxes and Hydrocarbon waxes	REACH #: 01-2119488076-30 EC: 232-315-6 CAS: 8002-74-2	≤0.1	Not classified.	[2]
maleic anhydride	REACH #: 01-2119472428-31 EC: 203-571-6 CAS: 108-31-6 Index: 607-096-00-9	≤0.1	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372 (respiratory system) (inhalation) EUH071	[1] [2]
2-methoxy-1-methylethyl acetate	REACH #: 01-2119475791-29 EC: 203-603-9 CAS: 108-65-6 Index: 607-195-00-7	≤0.1	Flam. Liq. 3, H226 STOT SE 3, H336	[1] [2]
Naphthenic acids, copper salts	EC: 215-657-0 CAS: 1338-02-9 Index: 029-003-00-5	<0.1	Flam. Liq. 3, H226 Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) 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

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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 | : 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. Get medical attention. |
| Inhalation | : 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. Get medical attention. If necessary, call a poison center or physician. 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 | : Wash with plenty of soap and 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. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| Ingestion | : 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. Get medical attention. 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 or irritation
watering
redness |
| Inhalation | : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced foetal weight
increase in foetal deaths
skeletal malformations |
| Skin contact | : Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations |
| Ingestion | : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations |

SECTION 4: First aid measures

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 dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to British standard BS EN 469 will provide a basic level of protection for chemical incidents.

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing 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). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

SECTION 6: Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

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

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. 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 a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidising materials. 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.

Seveso Directive - Reporting thresholds**Danger criteria**

Category	Notification and MAPP threshold	Safety report threshold
P5c	5000 tonnes	50000 tonnes

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
styrene	EH40/2005 WELs (United Kingdom (UK), 1/2020) STEL 15 minutes: 250 ppm. TWA 8 hours: 100 ppm. TWA 8 hours: 430 mg/m ³ . STEL 15 minutes: 1080 mg/m ³ .
ethyl acetate	EH40/2005 WELs (United Kingdom (UK), 1/2020) STEL 15 minutes: 400 ppm. TWA 8 hours: 200 ppm. STEL 15 minutes: 1468 mg/m ³ . TWA 8 hours: 734 mg/m ³ .
propane-1,2-diol	EH40/2005 WELs (United Kingdom (UK), 1/2020) TWA 8 hours: 474 mg/m ³ . Form: total vapour and particulates. TWA 8 hours: 150 ppm. Form: total vapour and particulates. TWA 8 hours: 10 mg/m ³ . Form: Particulate.
cobalt bis(2-ethylhexanoate)	EH40/2005 WELs (United Kingdom (UK), 1/2020) [cobalt and cobalt compounds] Carc. Inhalation sensitiser. TWA 8 hours: 0.1 mg/m ³ (as Co).
N,N-dimethylaniline	EH40/2005 WELs (United Kingdom (UK), 1/2020) Absorbed through skin. STEL 15 minutes: 50 mg/m ³ . STEL 15 minutes: 10 ppm. TWA 8 hours: 5 ppm. TWA 8 hours: 25 mg/m ³ .
2,2' -oxybisethanol	EH40/2005 WELs (United Kingdom (UK), 1/2020) TWA 8 hours: 101 mg/m ³ . TWA 8 hours: 23 ppm.
1,2,4-trimethylbenzene	EH40/2005 WELs (United Kingdom (UK), 1/2020) [trimethylbenzenes, all isomers or mixtures] TWA 8 hours: 25 ppm. TWA 8 hours: 125 mg/m ³ .
1-methoxy-2-propanol	EH40/2005 WELs (United Kingdom (UK), 1/2020) Absorbed through skin. STEL 15 minutes: 560 mg/m ³ . STEL 15 minutes: 150 ppm. TWA 8 hours: 375 mg/m ³ . TWA 8 hours: 100 ppm.
ethanol	EH40/2005 WELs (United Kingdom (UK), 1/2020) TWA 8 hours: 1000 ppm. TWA 8 hours: 1920 mg/m ³ .
(2-methoxymethylethoxy)propanol	EH40/2005 WELs (United Kingdom (UK), 1/2020) Absorbed through skin. TWA 8 hours: 308 mg/m ³ . TWA 8 hours: 50 ppm.
1,4-dihydroxybenzene	EH40/2005 WELs (United Kingdom (UK), 1/2020) TWA 8 hours: 0.5 mg/m ³ .
Paraffin waxes and Hydrocarbon waxes	EH40/2005 WELs (United Kingdom (UK), 1/2020) STEL 15 minutes: 6 mg/m ³ . Form: Fume. TWA 8 hours: 2 mg/m ³ . Form: Fume.
maleic anhydride	EH40/2005 WELs (United Kingdom (UK), 1/2020) Inhalation sensitiser. STEL 15 minutes: 3 mg/m ³ . TWA 8 hours: 1 mg/m ³ .
2-methoxy-1-methylethyl acetate	EH40/2005 WELs (United Kingdom (UK), 1/2020) Absorbed through skin. STEL 15 minutes: 548 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 274 mg/m ³ .

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Naphthenic acids, copper salts	STEL 15 minutes: 100 ppm. EH40/2005 WELs (United Kingdom (UK), 1/2020) [Copper and compounds] STEL 15 minutes: 2 mg/m³ (as Cu). Form: Dusts and Mists. TWA 8 hours: 1 mg/m³ (as Cu). Form: Dusts and Mists.
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Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: British Standard BS EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) British Standard BS EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) British Standard BS 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	Result
styrene	DNEL - Workers - Short term - Inhalation 289 mg/m³ <u>Effects</u> : Systemic DNEL - Workers - Short term - Inhalation 306 mg/m³ <u>Effects</u> : Local DNEL - Workers - Long term - Dermal 406 mg/kg bw/day <u>Effects</u> : Systemic DNEL - Workers - Long term - Inhalation 85 mg/m³ <u>Effects</u> : Systemic DNEL - General population - Consumers - Short term - Inhalation 174.25 mg/m³ <u>Effects</u> : Systemic DNEL - General population - Consumers - Short term - Inhalation 182.75 mg/m³ <u>Effects</u> : Local DNEL - General population - Consumers - Long term - Dermal 343 mg/kg bw/day <u>Effects</u> : Systemic DNEL - General population - Consumers - Long term - Inhalation 10.2 mg/m³ <u>Effects</u> : Systemic DNEL - General population - Consumers - Long term - Oral 2.1 mg/kg bw/day <u>Effects</u> : Systemic DNEL - General population - Long term - Oral 7.7 µg/kg bw/day <u>Effects</u> : Systemic

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	DNEL - General population - Long term - Inhalation 1 mg/m³ <u>Effects:</u> Local
	DNEL - General population - Long term - Inhalation 1 mg/m³ <u>Effects:</u> Systemic
	DNEL - General population - Short term - Inhalation 10 mg/m³ <u>Effects:</u> Local
	DNEL - General population - Short term - Inhalation 10 mg/m³ <u>Effects:</u> Systemic
	DNEL - Workers - Long term - Inhalation 85 mg/m³ <u>Effects:</u> Systemic
	DNEL - Workers - Short term - Inhalation 100 mg/m³ <u>Effects:</u> Local
	DNEL - Workers - Long term - Inhalation 100 mg/m³ <u>Effects:</u> Local
	DNEL - Workers - Short term - Inhalation 100 mg/m³ <u>Effects:</u> Systemic
	DNEL - General population - Long term - Dermal 343 mg/kg bw/day <u>Effects:</u> Systemic
	DNEL - Workers - Long term - Dermal 406 mg/kg bw/day <u>Effects:</u> Systemic
ethyl acetate	DNEL - General population - Long term - Oral 4.5 mg/kg bw/day <u>Effects:</u> Systemic
	DNEL - General population - Long term - Dermal 37 mg/kg bw/day <u>Effects:</u> Systemic
	DNEL - Workers - Long term - Dermal 63 mg/kg bw/day <u>Effects:</u> Systemic
	DNEL - General population - Long term - Inhalation 367 mg/m³ <u>Effects:</u> Local
	DNEL - General population - Long term - Inhalation 367 mg/m³ <u>Effects:</u> Systemic
	DNEL - General population - Short term - Inhalation 734 mg/m³ <u>Effects:</u> Local

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	DNEL - General population - Short term - Inhalation 734 mg/m³ <u>Effects</u>: Systemic DNEL - Workers - Long term - Inhalation 734 mg/m³ <u>Effects</u>: Local DNEL - Workers - Long term - Inhalation 734 mg/m³ <u>Effects</u>: Systemic DNEL - Workers - Short term - Inhalation 1468 mg/m³ <u>Effects</u>: Local DNEL - Workers - Short term - Inhalation 1468 mg/m³ <u>Effects</u>: Systemic
propane-1,2-diol	DNEL - General population - Consumers - Long term - Dermal 213 mg/kg bw/day <u>Effects</u>: Systemic DNEL - General population - Consumers - Long term - Inhalation 50 mg/m³ <u>Effects</u>: Systemic DNEL - General population - Consumers - Long term - Oral 85 mg/kg bw/day <u>Effects</u>: Systemic DNEL - General population - Consumers - Long term - Inhalation 10 mg/m³ <u>Effects</u>: Local DNEL - General population - Long term - Inhalation 10 mg/m³ <u>Effects</u>: Local DNEL - Workers - Long term - Inhalation 10 mg/m³ <u>Effects</u>: Local DNEL - General population - Long term - Inhalation 50 mg/m³ <u>Effects</u>: Systemic DNEL - Workers - Long term - Inhalation 168 mg/m³ <u>Effects</u>: Systemic
cobalt bis(2-ethylhexanoate)	DNEL - General population - Long term - Inhalation 37 µg/m³ <u>Effects</u>: Local DNEL - General population - Long term - Oral 175 µg/kg bw/day <u>Effects</u>: Systemic DNEL - Workers - Long term - Inhalation

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	235.1 µg/m³ <u>Effects</u> : Local
N,N-dimethylaniline	DNEL - General population - Long term - Inhalation 0.27217391 mg/m³ <u>Effects</u> : Systemic DNEL - General population - Long term - Dermal 0.313 mg/kg bw/day <u>Effects</u> : Systemic DNEL - Workers - Long term - Dermal 0.626 mg/kg bw/day <u>Effects</u> : Systemic DNEL - General population - Long term - Oral 0.62913 mg/kg bw/day <u>Effects</u> : Systemic DNEL - Workers - Long term - Inhalation 1.1037368 mg/m³ <u>Effects</u> : Systemic
triphenylphosphine	DNEL - General population - Long term - Oral 0.01 mg/kg bw/day <u>Effects</u> : Systemic DNEL - Workers - Long term - Dermal 0.07 mg/kg bw/day <u>Effects</u> : Systemic DNEL - Workers - Long term - Inhalation 0.5 mg/m³ <u>Effects</u> : Systemic
2,2' -oxybisethanol	DNEL - Workers - Long term - Inhalation 44 mg/m³ <u>Effects</u> : Systemic DNEL - General population - Long term - Inhalation 12 mg/m³ <u>Effects</u> : Local DNEL - General population - Long term - Inhalation 12 mg/m³ <u>Effects</u> : Systemic DNEL - General population - Long term - Dermal 21 mg/kg bw/day <u>Effects</u> : Systemic DNEL - Workers - Long term - Dermal 43 mg/kg bw/day <u>Effects</u> : Systemic DNEL - Workers - Long term - Inhalation 60 mg/m³ <u>Effects</u> : Local
1,2,4-trimethylbenzene	DNEL - General population - Long term - Oral 15 mg/kg bw/day <u>Effects</u> : Systemic DNEL - General population - Short term - Inhalation

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	29.4 mg/m³ Effects: Local
	DNEL - General population - Short term - Inhalation 29.4 mg/m³ Effects: Systemic
	DNEL - Workers - Short term - Inhalation 100 mg/m³ Effects: Local
	DNEL - Workers - Short term - Inhalation 100 mg/m³ Effects: Systemic
	DNEL - Workers - Long term - Dermal 16171 mg/kg bw/day Effects: Systemic
	DNEL - General population - Long term - Inhalation 29.4 mg/m³ Effects: Local
	DNEL - General population - Long term - Inhalation 29.4 mg/m³ Effects: Systemic
	DNEL - Workers - Long term - Inhalation 100 mg/m³ Effects: Local
	DNEL - Workers - Long term - Inhalation 100 mg/m³ Effects: Systemic
	DNEL - General population - Long term - Dermal 9512 mg/kg bw/day Effects: Systemic
1-methoxy-2-propanol	DNEL - General population - Long term - Oral 33 mg/kg bw/day Effects: Systemic
	DNEL - General population - Long term - Inhalation 43.9 mg/m³ Effects: Systemic
	DNEL - General population - Long term - Dermal 78 mg/kg bw/day Effects: Systemic
	DNEL - Workers - Long term - Dermal 183 mg/kg bw/day Effects: Systemic
	DNEL - Workers - Long term - Inhalation 369 mg/m³ Effects: Systemic
	DNEL - Workers - Short term - Inhalation 553.5 mg/m³ Effects: Local
	DNEL - Workers - Short term - Inhalation

SECTION 8: Exposure controls/personal protection553.5 mg/m³Effects: Systemic

ethanol

DNEL - Workers - Long term - Inhalation380 mg/m³Effects: Systemic**DNEL - General population - Long term - Oral**

87 mg/kg bw/day

Effects: Systemic**DNEL - General population - Long term - Inhalation**114 mg/m³Effects: Systemic**DNEL - General population - Long term - Dermal**

206 mg/kg bw/day

Effects: Systemic**DNEL - Workers - Long term - Dermal**

343 mg/kg bw/day

Effects: Systemic**DNEL - General population - Short term - Inhalation**950 mg/m³Effects: Local**DNEL - Workers - Short term - Inhalation**1900 mg/m³Effects: Local

1,4-naphthoquinone

DNEL - Workers - Long term - Inhalation0.0329 mg/m³Effects: Systemic

(2-methoxymethylethoxy)propanol

DNEL - General population - Long term - Oral

36 mg/kg bw/day

Effects: Systemic**DNEL - General population - Long term - Inhalation**37.2 mg/m³Effects: Systemic**DNEL - General population - Long term - Dermal**

121 mg/kg bw/day

Effects: Systemic**DNEL - Workers - Long term - Dermal**

283 mg/kg bw/day

Effects: Systemic**DNEL - Workers - Long term - Inhalation**308 mg/m³Effects: Systemic

1,4-dihydroxybenzene

DNEL - General population - Human via the environment - Long term - Dermal

64 mg/kg bw/day

Effects: Systemic**DNEL - General population - Human via the environment - Long term - Inhalation**1.74 mg/m³Effects: Systemic

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SECTION 8: Exposure controls/personal protection

	DNEL - General population - Human via the environment - Long term - Inhalation 0.5 mg/m³ <u>Effects</u> : Local
	DNEL - General population - Long term - Oral 0.6 mg/kg bw/day <u>Effects</u> : Systemic
	DNEL - General population - Long term - Inhalation 1.05 mg/m³ <u>Effects</u> : Systemic
	DNEL - General population - Long term - Dermal 1.66 mg/kg bw/day <u>Effects</u> : Systemic
	DNEL - Workers - Long term - Inhalation 2.1 mg/m³ <u>Effects</u> : Systemic
	DNEL - Workers - Long term - Dermal 3.33 mg/kg bw/day <u>Effects</u> : Systemic
maleic anhydride	DNEL - Workers - Short term - Dermal 0.04 mg/kg bw/day <u>Effects</u> : Systemic
	DNEL - Workers - Short term - Dermal 0.04 mg/cm² <u>Effects</u> : Local
	DNEL - Workers - Long term - Dermal 0.04 mg/kg bw/day <u>Effects</u> : Systemic
	DNEL - Workers - Long term - Dermal 0.04 mg/cm² <u>Effects</u> : Local
	DNEL - Workers - Long term - Inhalation 0.4 mg/m³ <u>Effects</u> : Systemic
	DNEL - Workers - Long term - Inhalation 0.4 mg/m³ <u>Effects</u> : Local
	DNEL - General population - Long term - Inhalation 0.05 mg/m³ <u>Effects</u> : Systemic
	DNEL - General population - Long term - Oral 0.06 mg/kg bw/day <u>Effects</u> : Systemic
	DNEL - General population - Long term - Inhalation 0.08 mg/m³ <u>Effects</u> : Local
	DNEL - Workers - Long term - Inhalation 0.081 mg/m³ <u>Effects</u> : Local

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SECTION 8: Exposure controls/personal protection

	DNEL - Workers - Long term - Inhalation 0.081 mg/m³ <u>Effects</u>: Systemic DNEL - General population - Short term - Oral 0.1 mg/kg bw/day <u>Effects</u>: Systemic DNEL - General population - Short term - Dermal 0.1 mg/kg bw/day <u>Effects</u>: Systemic DNEL - General population - Long term - Dermal 0.1 mg/kg bw/day <u>Effects</u>: Systemic DNEL - Workers - Short term - Dermal 0.2 mg/kg bw/day <u>Effects</u>: Systemic DNEL - Workers - Long term - Dermal 0.2 mg/kg bw/day <u>Effects</u>: Systemic DNEL - Workers - Short term - Inhalation 0.2 mg/m³ <u>Effects</u>: Local DNEL - Workers - Short term - Inhalation 0.2 mg/m³ <u>Effects</u>: Systemic
2-methoxy-1-methylethyl acetate	DNEL - General population - Long term - Inhalation 33 mg/m³ <u>Effects</u>: Local DNEL - General population - Long term - Inhalation 33 mg/m³ <u>Effects</u>: Systemic DNEL - General population - Long term - Oral 36 mg/kg bw/day <u>Effects</u>: Systemic DNEL - Workers - Long term - Inhalation 275 mg/m³ <u>Effects</u>: Systemic DNEL - General population - Long term - Dermal 320 mg/kg bw/day <u>Effects</u>: Systemic DNEL - Workers - Short term - Inhalation 550 mg/m³ <u>Effects</u>: Local DNEL - Workers - Long term - Dermal 796 mg/kg bw/day <u>Effects</u>: Systemic
Naphthenic acids, copper salts	DNEL - General population - Long term - Inhalation 0.16 mg/m³ <u>Effects</u>: Systemic

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SECTION 8: Exposure controls/personal protection

DNEL - General population - Long term - Oral
0.18 mg/kg bw/day
Effects: Systemic

DNEL - General population - Long term - Dermal
0.18 mg/kg bw/day
Effects: Systemic

DNEL - Workers - Long term - Dermal
0.36 mg/kg bw/day
Effects: Systemic

DNEL - Workers - Long term - Inhalation
0.63 mg/m³
Effects: Systemic

PNECs

Product/ingredient name

styrene

Result

Fresh water
0.028 mg/l

Marine water
0.0028 mg/l

Fresh water sediment
0.614 mg/kg dwt

Marine water sediment
0.0614 mg/kg dwt

Soil
0.2 mg/kg dwt

Sewage Treatment Plant
5 mg/l

propane-1,2-diol

Fresh water
260 mg/l

Marine water
26 mg/l

Sewage Treatment Plant
20000 mg/l

Fresh water sediment
572 mg/kg

Marine water sediment
57.2 mg/kg

Soil
50 mg/kg

ethanol

Fresh water
0.96 mg/l

Marine water
0.79 mg/l

Fresh water sediment
3.6 mg/kg

Soil

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SECTION 8: Exposure controls/personal protection

	0.63 mg/kg
1,4-dihydroxybenzene	Fresh water 0.114 µg/l
	Marine water 0.0114 µg/l
	Fresh water sediment 0.00098 mg/kg
	Marine water sediment 0.000097 mg/kg
	Soil 0.000129 mg/kg
	Sewage Treatment Plant 0.71 mg/l
maleic anhydride	Fresh water 0.04281 mg/l
	Marine water 0.004281 mg/l
	Fresh water sediment 0.334 mg/kg dwt
	Marine water sediment 0.0334 mg/kg dwt
	Soil 0.0415 mg/kg dwt
	Sewage Treatment Plant 44.6 mg/l

8.2 Exposure controls

Appropriate engineering controls	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
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. Contaminated work clothing should not be allowed out of the workplace. 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.
Skin protection	

SECTION 8: Exposure controls/personal 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.
- 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to British Standard BS EN 1149 for further information on material and design requirements and test methods.
- 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.
- 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.
- Colour** : Not available.
- Odour** : Not available.
- Odour threshold** : Not available.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : Not available.
- Flammability (solid, gas)** : Not available.
- Upper/lower flammability or explosive limits** : Not available.
- Flash point** : Closed cup: 32°C (89.6°F)
- Auto-ignition temperature** :

Ingredient name	°C	°F	Method
styrene	490	914	

- Decomposition temperature** : Not available.
- pH** : Not available.
- Viscosity** : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C): >40 mm²/s
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/ water** : Not applicable.
- Vapour pressure** :

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SECTION 9: Physical and chemical properties

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
styrene	6.4	0.85				

- Evaporation rate : Not available.
- Relative density : Not available.
- Vapour density : Not available.
- Explosive properties : Not available.
- Oxidising properties : Not available.
- Particle characteristics
- Median particle size : Not applicable.

Not available.

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 : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- 10.5 Incompatible materials : Reactive or incompatible with the following materials:
oxidising materials
- 10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name
styrene

Result

Rat - Oral - LD50
2650 mg/kg
Toxic effects: Behavioral - Somnolence (general depressed activity) Liver - Other changes

Rat - Dermal - LD50
>2000 mg/kg

Rat - Inhalation - LC50 Vapour
11800 mg/m³ [4 hours]

Rat - Inhalation - LC50 Gas.
2770 ppm [4 hours]

ethyl acetate
Rat - Oral - LD50
5620 mg/kg

propane-1,2-diol
Rat - Oral - LD50
20 g/kg

SECTION 11: Toxicological information**Rabbit - Dermal - LD50**

20800 mg/kg

cobalt bis(2-ethylhexanoate)

Rabbit - Dermal - LD50

>5 g/kg

Toxic effects: Skin After topical exposure - Primary irritation**Rat - Oral - LD50**

>2000 mg/kg

N,N-dimethylaniline

Rat - Oral - LD50

1120 mg/kg

Rabbit - Dermal - LD50

1700 mg/kg

triphenylphosphine

Rat - Oral - LD50

700 mg/kg

Toxic effects: Behavioral - Convulsions or effect on seizure threshold**Rabbit - Dermal - LD50**

>5 g/kg

Rat - Inhalation - LC50 Gas.

1135 ppm [4 hours]

Toxic effects: Eye - Lacrimation Lung, Thorax, or Respiration - Dyspnea Gross Metabolite Changes - Weight loss or decreased weight gain

2,2' -oxybisethanol

Rabbit - Dermal - LD50

11890 mg/kg

Rat - Oral - LD50

12000 mg/kg

Toxic effects: Brain and Coverings - Other degenerative changes Liver - Other changes Kidney, Ureter, and Bladder - Other changes

1,2,4-trimethylbenzene

Rat - Oral - LD50

5 g/kg

Rat - Inhalation - LC50 Vapour18000 mg/m³ [4 hours]

1-methoxy-2-propanol

Rabbit - Dermal - LD50

13 g/kg

Rat - Oral - LD50

6600 mg/kg

Toxic effects: Brain and Coverings - Other degenerative changes Behavioral - General anesthetic Lung, Thorax, or Respiration - Dyspnea

ethanol

Rat - Oral - LD50

7 g/kg

Rat - Inhalation - LC50 Vapour124700 mg/m³ [4 hours]

1,4-naphthoquinone

Rat - Oral - LD50

190 mg/kg

Toxic effects: Behavioral - Somnolence (general depressed activity) Gross Metabolite Changes - Weight loss or decreased

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SECTION 11: Toxicological information

	weight gain
	Rat - Dermal - LD50 202 mg/kg <u>Toxic effects:</u> Behavioral - Somnolence (general depressed activity) Behavioral - Tremor Lung, Thorax, or Respiration - Respiratory depression
	Rat - Inhalation - LC50 Vapour 0.046 mg/l [4 hours]
1,4-dihydroxybenzene	Rat - Oral - LD50 375 mg/kg
Paraffin waxes and Hydrocarbon waxes	Rat - Oral - LD50 >5000 mg/kg Rat - Dermal - LD50 >2000 mg/kg
maleic anhydride	Rat - Oral - LD50 400 mg/kg Rabbit - Dermal - LD50 2620 mg/kg
2-methoxy-1-methylethyl acetate	Rat - Oral - LD50 8532 mg/kg Rabbit - Dermal - LD50 >5 g/kg
Naphthenic acids, copper salts	Rat - Oral - LD50 2 g/kg

Conclusion/Summary [Product] : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Crystic VE679 PA (Thix HV)	75218.3	225654.8	7393.9	31.1	N/A
styrene	2650	N/A	2770	11.8	N/A
ethyl acetate	5620	N/A	N/A	N/A	N/A
propane-1,2-diol	20000	20800	N/A	N/A	N/A
N,N-dimethylaniline	100	300	N/A	3	N/A
triphenylphosphine	700	N/A	N/A	N/A	N/A
2,2' -oxybisethanol	500	11890	N/A	N/A	N/A
1,2,4-trimethylbenzene	5000	N/A	N/A	18	N/A
1-methoxy-2-propanol	6600	13000	N/A	N/A	N/A
ethanol	7000	N/A	N/A	124.7	N/A
1,4-naphthoquinone	190	N/A	N/A	0.046	N/A
1,4-dihydroxybenzene	375	N/A	N/A	N/A	N/A
maleic anhydride	400	2620	N/A	N/A	N/A
2-methoxy-1-methylethyl acetate	8532	N/A	N/A	N/A	N/A
Naphthenic acids, copper salts	2000	N/A	N/A	N/A	N/A

Skin corrosion/irritation

Product/ingredient name	Result
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SECTION 11: Toxicological information

styrene	Rabbit - Skin - Mild irritant <u>Amount/concentration applied:</u> 500 mg
	Rabbit - Skin - Moderate irritant <u>Amount/concentration applied:</u> 100 %
triphenylphosphine	Rabbit - Skin - Mild irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 500 mg
2,2' -oxybisethanol	Human - Skin - Mild irritant <u>Duration of treatment/exposure:</u> 72 hours <u>Amount/concentration applied:</u> 112 mg l
	Rabbit - Skin - Mild irritant <u>Amount/concentration applied:</u> 500 mg
1-methoxy-2-propanol	Rabbit - Skin - Mild irritant <u>Amount/concentration applied:</u> 500 mg
1,4-dihydroxybenzene	Human - Skin - Mild irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 2 %
	Human - Skin - Moderate irritant <u>Duration of treatment/exposure:</u> 48 hours <u>Amount/concentration applied:</u> 4 %
	Mouse - Skin - Mild irritant <u>Duration of treatment/exposure:</u> 48 hours <u>Amount/concentration applied:</u> 10 %

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
styrene	Human - Eyes - Mild irritant <u>Amount/concentration applied:</u> 50 ppm
	Rabbit - Eyes - Moderate irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 100 mg
	Rabbit - Eyes - Severe irritant <u>Amount/concentration applied:</u> 100 mg
triphenylphosphine	Rabbit - Eyes - Mild irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 500 mg
2,2' -oxybisethanol	Rabbit - Eyes - Mild irritant <u>Amount/concentration applied:</u> 50 mg
ethanol	Rabbit - Eyes - Mild irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 500 mg
	Rabbit - Eyes - Moderate irritant <u>Duration of treatment/exposure:</u> 0.066666667 minutes <u>Amount/concentration applied:</u> 100 mg
	Rabbit - Eyes - Moderate irritant <u>Amount/concentration applied:</u> 100 uL

SECTION 11: Toxicological information**Rabbit - Eyes - Severe irritant**Amount/concentration applied: 500 mg**Rabbit - Eyes - Mild irritant**Duration of treatment/exposure: 1 hoursAmount/concentration applied: 50 pph**Conclusion/Summary [Product]** : Not available.**Respiratory corrosion/irritation**

Not available.

Conclusion/Summary [Product] : Not available.**Respiratory or skin sensitization****Product/ingredient name**

cobalt bis(2-ethylhexanoate)

Result**Mouse - skin**

OECD 429

Result: Sensitising

1,4-dihydroxybenzene

Mouse - skinResult: Sensitising**Guinea pig - skin**Result: Not sensitizing**Skin****Conclusion/Summary [Product]** : Not available.**Respiratory****Conclusion/Summary [Product]** : Not available.**Germ cell mutagenicity****Product/ingredient name**

1,4-dihydroxybenzene

Result**In vivo - Bacteria**Result: Negative**In vivo - Mammalian-Animal**Result: Positive**Conclusion/Summary [Product]** : Not available.**Carcinogenicity**

Not available.

Conclusion/Summary [Product] : Not available.**Reproductive toxicity**

Not available.

Conclusion/Summary [Product] : Not available.

SECTION 11: Toxicological information**Specific target organ toxicity (single exposure)****Product/ingredient name**

styrene
ethyl acetate
1,2,4-trimethylbenzene
1-methoxy-2-propanol
1,4-naphthoquinone
2-methoxy-1-methylethyl acetate

Result

STOT SE 3, H335 (Respiratory tract irritation)
STOT SE 3, H336 (Narcotic effects)
STOT SE 3, H335 (Respiratory tract irritation)
STOT SE 3, H336 (Narcotic effects)
STOT SE 3, H335 (Respiratory tract irritation)
STOT SE 3, H336 (Narcotic effects)

Specific target organ toxicity (repeated exposure)**Product/ingredient name**

styrene
triphenylphosphine

maleic anhydride

Result

STOT RE 1, H372 (hearing organs)
STOT RE 2, H373 (central nervous system (CNS), peripheral nervous system) (inhalation)
STOT RE 1, H372 (respiratory system) (inhalation)

Aspiration hazard**Product/ingredient name**

styrene
1,2,4-trimethylbenzene

Result

ASPIRATION HAZARD - Category 1
ASPIRATION HAZARD - Category 1

Information on likely routes of exposure

Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
Inhalation : Harmful if inhaled. May cause respiratory irritation.
Skin contact : Causes skin irritation. May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations

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

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SECTION 11: Toxicological information

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
<u>Potential chronic health effects</u>	
Product/ingredient name	Result
styrene	Chronic - Rat - Dermal - NOAEL 615 mg/kg
	Chronic - Rat - Inhalation - NOAEL 20 ppm [8 hours]
1,4-dihydroxybenzene	Sub-chronic - Rat - Oral - NOAEL 20 mg/kg [90 days]
	Sub-chronic - Rat - Dermal - NOAEL >73.9 mg/kg [90 days]
Paraffin waxes and Hydrocarbon waxes	Sub-chronic - Rat - Oral - NOAEL 1.5 mg/kg
Conclusion/Summary [Product]	: Not available.
General	: Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Reproductive toxicity	: Suspected of damaging the unborn child.
<u>Other information</u>	
Not available.	

SECTION 12: Ecological information

12.1 Toxicity	
Product/ingredient name	Result
styrene	Acute - LC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> Age: 30 days; Size: 19 mm; Weight: 0.101 g 4020 µg/l [96 hours] Effect: Mortality
	Acute - EC50 - Fresh water Daphnia - Water flea - <i>Daphnia magna</i> Age: ≤24 hours 4700 µg/l [48 hours] Effect: Mortality
	Chronic - NOEC Daphnia 1.01 mg/l [21 days]
	Acute - EC50 - Fresh water Algae - Green algae - <i>Raphidocelis subcapitata</i> 720 µg/l [96 hours] Effect: Population
	Chronic - NOEC - Fresh water Algae - Green algae - <i>Raphidocelis subcapitata</i> 63 µg/l [96 hours] Effect: Population
ethyl acetate	Acute - LC50 - Fresh water

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SECTION 12: Ecological information

	Daphnia - Water flea - <i>Daphnia cucullata</i> <u>Age</u>: 11 days 154 mg/l [48 hours] <u>Effect</u>: Mortality Acute - LC50 - Fresh water Fish - Indian catfish - <i>Heteropneustes fossilis</i> <u>Size</u>: 14.16 cm; <u>Weight</u>: 25.54 g 212.5 mg/l [96 hours] <u>Effect</u>: Mortality Acute - EC50 - Fresh water Algae - Green algae - <i>Selenastrum sp.</i> 2500 mg/l [96 hours] <u>Effect</u>: Population Chronic - NOEC - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> - Embryo <u>Age</u>: <24 hours 75.6 mg/l [32 days] <u>Effect</u>: Mortality Chronic - NOEC - Fresh water Daphnia - Water flea - <i>Daphnia magna</i> <u>Age</u>: ≤24 hours 2.4 mg/l [21 days] <u>Effect</u>: Mortality
propane-1,2-diol	Acute - LC50 - Fresh water Crustaceans - Water flea - <i>Ceriodaphnia dubia</i> <u>Age</u>: <24 hours 1020 mg/l [48 hours] <u>Effect</u>: Mortality Acute - LC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> <u>Age</u>: ≤7 days 710 mg/l [96 hours] <u>Effect</u>: Mortality Acute - EC50 OECD [Alga, Growth Inhibition Test] Algae 24200 mg/l [72 hours] Chronic - NOEC Daphnia 13020 mg/l [7 days]
N,N-dimethylaniline	Acute - EC50 Daphnia - Water flea - <i>Daphnia magna</i> 5 mg/l [48 hours] Acute - IC50 Algae - <i>Desmodesmus subspicatus</i> 340 mg/l [96 hours] Acute - LC50 - Fresh water ASTM Fish - Fathead minnow - <i>Pimephales promelas</i> - Juvenile (Fledgling, Hatchling, Weanling) <u>Age</u>: 28 to 34 days; <u>Weight</u>: 0.12 g 65.6 mg/l [96 hours]

Crystic VE679 PA (Thix HV)

SECTION 12: Ecological information

	<u>Effect</u> : Mortality
2,2' -oxybisethanol	Acute - LC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> <u>Age</u> : 34 days; <u>Size</u> : 19.1 mm; <u>Weight</u> : 0.102 g 75.2 g/l [96 hours] <u>Effect</u> : Mortality
1,2,4-trimethylbenzene	Acute - LC50 - Marine water Crustaceans - Scud - <i>Elasmopus pecteniscus</i> - Adult 4910 µg/l [48 hours] <u>Effect</u> : Mortality Acute - LC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> <u>Age</u> : 34 days 7720 µg/l [96 hours] <u>Effect</u> : Mortality
ethanol	Chronic - NOEC - Fresh water Daphnia - Water flea - <i>Daphnia magna</i> - Neonate <u>Age</u> : <24 hours 100 µl/l [21 days] <u>Effect</u> : Mortality Chronic - NOEC - Marine water Algae - Neptune's Necklace - <i>Hormosira banksii</i> - Gamete 50 µl/l [72 hours] <u>Effect</u> : Histology Acute - EC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> <u>Age</u> : 31 days; <u>Size</u> : 22 mm; <u>Weight</u> : 0.14 g 12.8 g/l [96 hours] <u>Effect</u> : Behavior Acute - EC50 - Marine water Algae - Green algae - <i>Ulva pertusa</i> <u>Size</u> : 9.4 mm 3306 mg/l [96 hours] <u>Effect</u> : Reproduction Acute - EC50 - Fresh water Daphnia - Water flea - <i>Daphnia magna</i> 2 mg/l [48 hours] <u>Effect</u> : Intoxication
1,4-naphthoquinone	Acute - IC50 Algae 0.011 mg/l [72 hours]
1,4-dihydroxybenzene	Acute - EC50 Daphnia 0.134 mg/l [48 hours] Chronic - NOEC Daphnia 0.0057 mg/l [21 days] Chronic - NOEC Aquatic plants 0.019 mg/l [72 hours]

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SECTION 12: Ecological information

	Acute - LC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> - Larvae <u>Age</u>: <24 hours 0.06 mg/l [96 hours] <u>Effect</u>: Mortality Acute - IC50 - Fresh water Algae - Green algae - <i>Scenedesmus quadricauda</i> 0.25 mg/l [3 days] <u>Effect</u>: Population
maleic anhydride	Acute - LC50 - Fresh water Fish - Western mosquitofish - <i>Gambusia affinis</i> - Adult 230 ppm [96 hours] <u>Effect</u>: Mortality
2-methoxy-1-methylethyl acetate	Acute - EC50 Daphnia 373 mg/l [48 hours] Acute - LC50 Fish >100 mg/l [96 hours]
Naphthenic acids, copper salts	Acute - LC50 - Fresh water Daphnia - Water flea - <i>Daphnia magna</i> 2.7 mg/l [48 hours] <u>Effect</u>: Mortality Acute - LC50 - Fresh water US EPA Fish - Rainbow trout,donaldson trout - <i>Oncorhynchus mykiss</i> <u>Weight</u>: 0.57 g 0.161 ppm [96 hours] <u>Effect</u>: Mortality

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Product/ingredient name	Result
ethyl acetate	100% [28 days]
propane-1,2-diol	OECD [Ready Biodegradability - Manometric Respirometry Test] 81.07% [28 days] OECD [Biodegradability in Seawater] 90.6% [64 days]
1,4-naphthoquinone	35% [5 days]
1,4-dihydroxybenzene	70% [14 days] - Readily

Conclusion/Summary [Product] : Not available.

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Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
styrene	-	-	Readily
ethyl acetate	-	-	Readily
propane-1,2-diol	-	-	Readily
cobalt bis(2-ethylhexanoate)	-	-	Not readily
1,4-naphthoquinone	-	-	Inherent
1,4-dihydroxybenzene	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
styrene	2.96	13.49	Low
ethyl acetate	0.68	30	Low
propane-1,2-diol	-1.07	-	Low
cobalt bis(2-ethylhexanoate)	-	15600	High
N,N-dimethylaniline	1.171	16	Low
triphenylphosphine	2.83	4801	High
2,2' -oxybisethanol	-1.98	100	Low
1,2,4-trimethylbenzene	3.63	243	Low
1-methoxy-2-propanol	<1	-	Low
ethanol	-0.35	-	Low
1,4-naphthoquinone	1.71	-	Low
(2-methoxymethylethoxy) propanol	0.004	-	Low
1,4-dihydroxybenzene	0.59	3.162	Low
maleic anhydride	-2.78	-	Low
2-methoxy-1-methylethyl acetate	1.2	-	Low

12.4 Mobility in soil

Soil/water partition coefficient : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
styrene	No	N/A	No	Yes	No	N/A	No
ethyl acetate	No	N/A	No	No	No	N/A	No
propane-1,2-diol	No	N/A	N/A	No	N/A	N/A	N/A
cobalt bis(2-ethylhexanoate)	N/A	N/A	Yes	Yes	N/A	N/A	Yes
N,N-dimethylaniline	No	N/A	No	No	No	N/A	No
triphenylphosphine	N/A	N/A	Yes	Yes	No	N/A	No
2,2' -oxybisethanol	No	N/A	No	No	No	N/A	No
1,2,4-trimethylbenzene	No	N/A	No	No	No	N/A	No

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1-methoxy-2-propanol	No	N/A	N/A	No	N/A	N/A	N/A
ethanol	No	N/A	N/A	No	N/A	N/A	N/A
1,4-naphthoquinone	No	N/A	N/A	No	N/A	N/A	N/A
(2-methoxymethylethoxy) propanol	No	N/A	N/A	No	N/A	N/A	N/A
1,4-dihydroxybenzene	No	N/A	No	Yes	No	N/A	No
Paraffin waxes and Hydrocarbon waxes	No	No	No	No	No	No	No
maleic anhydride	N/A	N/A	N/A	Yes	N/A	N/A	N/A
2-methoxy-1-methylethyl acetate	No	N/A	N/A	No	N/A	N/A	N/A
Naphthenic acids, copper salts	No	N/A	N/A	No	N/A	N/A	N/A

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

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. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN1866	UN1866	UN1866	UN1866
14.2 UN proper shipping name	RESIN SOLUTION	RESIN SOLUTION	RESIN SOLUTION	Resin solution
14.3 Transport hazard class(es)	3 	3 	3 	3 
14.4 Packing group	III	III	III	III

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SECTION 14: Transport information

14.5 Environmental hazards	No.	Yes.	No.	No.
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Additional information

- ADR/RID : Hazard identification number 30
Limited quantity 5 L
Tunnel code (D/E)
- ADN : The product is only regulated as an environmentally hazardous substance when transported in tank vessels.
- IMDG : Emergency schedules F-E, _S-E_
Special provisions 223, 955
- IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 60 L. Packaging instructions: 355. Cargo Aircraft Only: 220 L. Packaging instructions: 366. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y344.
Special provisions A3
- 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.

- 14.7 Transport in bulk according to IMO instruments : Not available.

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

Annex XIV
None of the components are listed.

Substances of very high concern
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

Product/ingredient name	%	Designation [Usage]
Crystic VE679 PA (Thix HV)	≥90	3

Labelling : Not applicable.

Seveso Directive
This product is controlled under the Seveso Directive.
Danger criteria

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SECTION 15: Regulatory information**Category**

P5c

National regulations

Product/ingredient name	List name	Name on list	Classification	Notes
cobalt bis(2-ethylhexanoate)	EH40/2005 WELs	cobalt and cobalt compounds	Carc	-

EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

International regulations**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

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

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SECTION 16: Other information

Classification	Justification
Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Repr. 2, H361d STOT SE 3, H335 STOT RE 1, H372 (hearing organs) Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

Full text of abbreviated H statements

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H360F	May damage fertility.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
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.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH071	Corrosive to the respiratory tract.

Full text of classifications

Acute Tox. 1	ACUTE TOXICITY - Category 1
Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Carc. 2	CARCINOGENICITY - Category 2
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Resp. Sens. 1	RESPIRATORY SENSITISATION - Category 1
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Corr. 1C	SKIN CORROSION/IRRITATION - Category 1C

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SECTION 16: Other information

Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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