

SAFETY DATA SHEET

Date of issue/Date of revision

: 22 January 2018

Version

: 20.01



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

1.1 Product identifier

Product name : SIGMATHERM 230 HARDENER
Product code : 00319396
Other means of identification : Not available.

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

Product use : Professional applications, Used by spraying.
**Use of the substance/
mixture** : Coating.

1.3 Details of the supplier of the safety data sheet

PPG Coatings SPRL/BVBA
Tweemontstraat 104
B-2100 Deurne
Belgium
Telephone +32-33606311
Fax +32-33606435

**e-mail address of person
responsible for this SDS** : PMC.Safety@PPG.com

1.4 Emergency telephone number

Supplier

Telephone number :
+31 20 4075210

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flam. Liq. 3, H226
Skin Corr. 1C, H314
Eye Dam. 1, H318
Skin Sens. 1, H317
Repr. 1B, H360F (Fertility)
STOT SE 3, H335
STOT RE 2, H373
Asp. Tox. 1, H304
Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

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

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

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SECTION 2: Hazards identification

2.2 Label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

Flammable liquid and vapour.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May damage fertility.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention :

Wear protective gloves. Wear protective clothing. Wear eye or face protection.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking. Do not breathe vapour.

Response :

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

Storage :

Store in a well-ventilated place. Keep cool.

Disposal :

Not applicable.
P280, P210, P260, P304 + P340, P301 + P310, P303 + P361 + P353, P305 + P351 + P338, P403, P235

Hazardous ingredients :

xylene
2-methylpropan-1-ol
2,4,6-tris(dimethylaminomethyl)phenol
N-(3-(trimethoxysilyl)propyl)ethylenediamine
m-phenylenebis(methylamine)
4,4'-isopropylidenediphenol
3-aminopropyldimethylamine

Supplemental label elements :

Not applicable.

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

Restricted to professional users.

Special packaging requirements

Containers to be fitted with child-resistant fastenings :

Not applicable.

Tactile warning of danger :

Not applicable.

2.3 Other hazards

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SECTION 2: Hazards identification

Other hazards which do not result in classification : Prolonged or repeated contact may dry skin and cause irritation.

SECTION 3: Composition/information on ingredients**3.2 Mixtures**

: Mixture

| Product/ingredient name | Identifiers | % by weight | <u>Classification</u> Regulation (EC) No. 1272/2008 [CLP] | Type |
|---|---|-------------|--|---------|
| benzyl alcohol | REACH #: 01-2119492630-38 EC: 202-859-9 CAS: 100-51-6 Index: 603-057-00-5 | ≥10 - ≤25 | Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Irrit. 2, H319 | [1] |
| xylene | REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9 | ≥10 - ≤21 | Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 STOT RE 2, H373 (central nervous system (CNS), kidneys, liver) Asp. Tox. 1, H304 Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) | [1] [2] |
| Formaldehyde, polymer with N,N-dimethyl-1,3-propanediamine and phenol | CAS: 445498-00-0 | ≥5.0 - ≤9.4 | Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) | [1] |
| 2-methylpropan-1-ol | REACH #: 01-2119484609-23 EC: 201-148-0 CAS: 78-83-1 Index: 603-108-00-1 | ≥5.0 - ≤10 | Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336 | [1] [2] |
| 2,4,6-tris(dimethylaminomethyl)phenol | EC: 202-013-9 CAS: 90-72-2 Index: 603-069-00-0 | ≥1.0 - ≤6.4 | Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 | [1] |
| N-(3-(trimethoxysilyl)propyl)ethylenediamine | EC: 217-164-6 CAS: 1760-24-3 | ≥1.0 - ≤4.7 | Acute Tox. 4, H332 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412 | [1] |
| ethylbenzene | REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4 | ≥1.0 - ≤3.7 | Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) Asp. Tox. 1, H304 | [1] [2] |
| m-phenylenebis(methylamine) | REACH #: 01-2119480150-50 EC: 216-032-5 CAS: 1477-55-0 | ≥1.0 - ≤3.3 | Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 3, H412 EUH071 | [1] |
| 4,4'-isopropylidenediphenol | REACH #: 01-2119457856-23 EC: 201-245-8 CAS: 80-05-7 | ≥1.0 - ≤5.0 | Eye Dam. 1, H318 Skin Sens. 1, H317 Repr. 1B, H360F | [1] [2] |

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SECTION 3: Composition/information on ingredients

| | | | | |
|----------------------------|---|-------------------|--|-----|
| salicylic acid | Index: 604-030-00-0 | | (Fertility) STOT SE 3, H335 Aquatic Chronic 2, H411 Acute Tox. 4, H302 | [1] |
| 3-aminopropyldimethylamine | EC: 200-712-3 CAS: 69-72-7 REACH #: 01-2119486842-27 EC: 203-680-9 CAS: 109-55-7 Index: 612-061-00-6 | ≤1.2 ≤0.30 | Eye Dam. 1, H318 Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 See Section 16 for the full text of the H statements declared above. | [1] |

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 or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
 [2] Substance with a workplace exposure limit
 [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
 [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
 [5] Substance of equivalent concern
 [6] Additional disclosure due to company policy

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

SUB codes represent substances without registered CAS Numbers.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
- Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.
- 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 delayedPotential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

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SECTION 4: First aid measures

- Eye contact** : Adverse symptoms may include the following:
 pain
 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:
 pain or irritation
 redness
 dryness
 cracking
 blistering may occur
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
 stomach pains
 nausea or vomiting
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- 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 toxic 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 oxides
 nitrogen oxides
 metal oxide/oxides
 Formaldehyde.

5.3 Advice for firefighters

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SECTION 5: Firefighting measures

- Special precautions 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 European standard 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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

- : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

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. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- 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. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

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

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SECTION 7: Handling and storage

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). 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. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Refer to special instructions/safety data sheet. 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 non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. 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** : Storage temperature: 0 to 35°C (32 to 95°F). 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 oxidizing 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.

7.3 Specific end use(s)

See Section 1.2 for Identified uses.

SECTION 8: Exposure controls/personal protection

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).

8.1 Control parameters

Occupational exposure limits

| Product/ingredient name | Exposure limit values |
|-------------------------|---|
| xylene | EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. STEL: 441 mg/m ³ 15 minutes. STEL: 100 ppm 15 minutes. TWA: 220 mg/m ³ 8 hours. TWA: 50 ppm 8 hours. |
| 2-methylpropan-1-ol | EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 231 mg/m ³ 15 minutes. STEL: 75 ppm 15 minutes. TWA: 154 mg/m ³ 8 hours. |

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| | |
|-----------------------------|--|
| ethylbenzene | TWA: 50 ppm 8 hours. EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. STEL: 552 mg/m ³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 441 mg/m ³ 8 hours. TWA: 100 ppm 8 hours. |
| 4,4'-isopropylidenediphenol | EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: inhalable dust |

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|-----------------------------|------|-----------------------|------------------------|------------|----------|
| xylene | DNEL | Short term Inhalation | 289 mg/m ³ | Workers | Systemic |
| | DNEL | Short term Inhalation | 289 mg/m ³ | Workers | Local |
| | DNEL | Long term Dermal | 180 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 77 mg/m ³ | Workers | Systemic |
| | DNEL | Short term Inhalation | 174 mg/m ³ | Consumers | Systemic |
| | DNEL | Short term Inhalation | 174 mg/m ³ | Consumers | Local |
| | DNEL | Long term Dermal | 108 mg/kg bw/day | Consumers | Systemic |
| | DNEL | Long term Inhalation | 14.8 mg/m ³ | Consumers | Systemic |
| | DNEL | Long term Oral | 1.6 mg/kg bw/day | Consumers | Systemic |
| 2-methylpropan-1-ol | DNEL | Long term Inhalation | 310 mg/m ³ | Workers | Local |
| | DNEL | Long term Inhalation | 55 mg/m ³ | Consumers | Local |
| ethylbenzene | DNEL | Long term Inhalation | 77 mg/m ³ | Workers | Systemic |
| | DNEL | Short term Inhalation | 293 mg/m ³ | Workers | Local |
| | DNEL | Long term Dermal | 180 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 15 mg/m ³ | Consumers | Systemic |
| | DNEL | Long term Oral | 1.6 mg/kg bw/day | Consumers | Systemic |
| 4,4'-isopropylidenediphenol | DNEL | Long term | 2 mg/m ³ | Workers | Systemic |

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| | | | | | |
|----------------------------|------|-----------------------|-----------------------|-----------|----------|
| 3-aminopropyldimethylamine | DNEL | Inhalation Short term | 2 mg/m ³ | Workers | Systemic |
| | DNEL | Inhalation Long term | 2 mg/m ³ | Workers | Local |
| | DNEL | Inhalation Short term | 2 mg/m ³ | Workers | Local |
| | DNEL | Inhalation Long term | 2 mg/m ³ | Workers | Local |
| | DNEL | Dermal Short term | 0.031 mg/kg bw/day | Workers | Systemic |
| | DNEL | Dermal Short term | 0.031 mg/kg bw/day | Workers | Systemic |
| | DNEL | Inhalation Long term | 1 mg/m ³ | Consumers | Systemic |
| | DNEL | Inhalation Short term | 1 mg/m ³ | Consumers | Systemic |
| | DNEL | Inhalation Long term | 1 mg/m ³ | Consumers | Local |
| | DNEL | Inhalation Short term | 1 mg/m ³ | Consumers | Local |
| | DNEL | Inhalation Long term | 1 mg/m ³ | Consumers | Local |
| | DNEL | Dermal Long term | 0.0019 mg/kg bw/day | Consumers | Systemic |
| | DNEL | Dermal Short term | 0.0019 mg/kg bw/day | Consumers | Systemic |
| | DNEL | Oral Long term | 0.004 mg/kg bw/day | Consumers | Systemic |
| | DNEL | Oral Short term | 0.004 mg/kg bw/day | Consumers | Systemic |
| | DNEL | Inhalation Long term | 4.9 mg/m ³ | Workers | Systemic |
| | DNEL | Inhalation Short term | 9.8 mg/m ³ | Workers | Systemic |

PNECs

| Product/ingredient name | Type | Compartment Detail | Value | Method Detail |
|-----------------------------|------|------------------------|-----------------|--------------------------|
| xylene | - | Fresh water | 0.327 mg/l | - |
| | - | Marine water | 0.327 mg/l | - |
| | - | Sewage Treatment Plant | 6.58 mg/l | - |
| 2-methylpropan-1-ol | - | Fresh water sediment | 12.46 mg/kg dwt | - |
| | - | Marine water sediment | 12.46 mg/kg dwt | - |
| | - | Soil | 2.31 mg/kg | - |
| ethylbenzene | - | Fresh water | 0.4 mg/l | Assessment Factors |
| | - | Marine water | 0.04 mg/l | Assessment Factors |
| | - | Sewage Treatment Plant | 10 mg/l | Assessment Factors |
| ethylbenzene | - | Fresh water sediment | 1.56 mg/kg dwt | Equilibrium Partitioning |
| | - | Marine water sediment | 0.156 mg/kg dwt | - |
| | - | Soil | 0.076 mg/kg dwt | Equilibrium Partitioning |
| 4,4'-isopropylidenediphenol | - | Fresh water | 0.1 mg/l | Assessment Factors |
| | - | Marine water | 0.01 mg/l | Assessment Factors |
| | - | Sewage Treatment Plant | 9.6 mg/l | Assessment Factors |
| 4,4'-isopropylidenediphenol | - | Fresh water sediment | 13.7 mg/kg dwt | Equilibrium Partitioning |
| | - | Marine water sediment | 1.37 mg/kg dwt | Equilibrium Partitioning |
| | - | Soil | 2.68 mg/kg dwt | Equilibrium Partitioning |
| 4,4'-isopropylidenediphenol | - | Secondary Poisoning | 20 mg/kg | - |
| | - | Fresh water | 0.018 mg/l | Sensitivity Distribution |
| | - | Marine water | 0.018 mg/l | Sensitivity Distribution |

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| | | | | |
|----------------------------|---|------------------------|-----------------|--------------------------|
| 3-aminopropyldimethylamine | - | Sewage Treatment Plant | 320 mg/l | Assessment Factors |
| | - | Fresh water sediment | 1.2 mg/kg dwt | Assessment Factors |
| | - | Marine water sediment | 0.24 mg/kg dwt | Assessment Factors |
| | - | Sewage Treatment Plant | 3.7 mg/kg dwt | Assessment Factors |
| | - | Fresh water | 0.034 mg/l | Assessment Factors |
| | - | Marine water | 0.003 mg/l | Assessment Factors |
| | - | Sewage Treatment Plant | 69.5 mg/l | Assessment Factors |
| | - | Fresh water sediment | 0.221 mg/kg dwt | Equilibrium Partitioning |
| | - | Marine water sediment | 0.022 mg/kg dwt | Equilibrium Partitioning |
| | - | Soil | 0.024 mg/kg dwt | Equilibrium Partitioning |

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 : Chemical splash goggles and face shield. Use eye protection according to EN 166.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended.

Gloves : nitrile neoprene

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 European Standard 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.

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- Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Wear a respirator conforming to EN140. Filter type: organic vapour (Type A) and particulate filter P3
- 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

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Clear.
- Odour** : Amine-like. [Strong]
- Odour threshold** : Not available.
- pH** : insoluble in water.
- Melting point/freezing point** : May start to solidify at the following temperature: 14°C (57.2°F) This is based on data for the following ingredient: m-phenylenebis(methylamine). Weighted average: -52.61°C (-62.7°F)
- Initial boiling point and boiling range** : >37.78°C
- Flash point** : Closed cup: 40°C
- Evaporation rate** : Highest known value: 0.84 (ethylbenzene) Weighted average: 0.42 compared with butyl acetate
- Material supports combustion.** : Yes.
- Flammability (solid, gas)** : liquid
- Upper/lower flammability or explosive limits** : Greatest known range: Lower: 1.3% Upper: 13% (benzyl alcohol)
- Vapour pressure** : Highest known value: <1.6 kPa (<12 mm Hg) (at 20°C) (2-methylpropan-1-ol). Weighted average: 0.48 kPa (3.6 mm Hg) (at 20°C)
- Vapour density** : Highest known value: 3.7 (Air = 1) (benzyl alcohol). Weighted average: 3.55 (Air = 1)
- Relative density** : 1
- Bulk density (g/cm³)** : 1
- Solubility(ies)** : Insoluble in the following materials: cold water.
- Partition coefficient: n-octanol/ water** : Not applicable.
- Auto-ignition temperature** : Lowest known value: 382°C (719.6°F) (2,4,6-tris(dimethylaminomethyl)phenol).
- Decomposition temperature** : Stable under recommended storage and handling conditions (see Section 7).
- Viscosity** : Kinematic (40°C): <0.14 cm²/s
- Explosive properties** : Product does not present an explosion hazard.
- Oxidising properties** : Product does not present an oxidizing hazard.

9.2 Other information

No additional information.

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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** : When exposed to high temperatures may produce hazardous decomposition products.
Refer to protective measures listed in sections 7 and 8.**10.5 Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.**10.6 Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides Formaldehyde. metal oxide/oxides**SECTION 11: Toxicological information****11.1 Information on toxicological effects**Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|------------------------|---------|------------|----------|
| benzyl alcohol | LD50 Dermal | Rabbit | 2000 mg/kg | - |
| | LD50 Oral | Rat | 1.23 g/kg | - |
| xylene | LD50 Dermal | Rabbit | >1.7 g/kg | - |
| | LD50 Oral | Rat | 4.3 g/kg | - |
| 2-methylpropan-1-ol | LD50 Dermal | Rabbit | 3400 mg/kg | - |
| | LD50 Oral | Rat | 2460 mg/kg | - |
| 2,4,6-tris (dimethylaminomethyl) phenol | LD50 Dermal | Rabbit | 1.28 g/kg | - |
| | LD50 Dermal | Rat | 1280 mg/kg | - |
| | LD50 Oral | Rat | 1200 mg/kg | - |
| N-(3-(trimethoxysilyl)propyl) ethylenediamine | LD50 Oral | Rat | 2413 mg/kg | - |
| ethylbenzene | LC50 Inhalation Vapour | Rat | 17.8 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | 17.8 g/kg | - |
| | LD50 Oral | Rat | 3.5 g/kg | - |
| m-phenylenebis (methylamine) | LC50 Inhalation Gas. | Rat | 700 ppm | 1 hours |
| | LD50 Dermal | Rabbit | 2 g/kg | - |
| | LD50 Oral | Rat | 930 mg/kg | - |
| bisphenol A | LD50 Dermal | Rabbit | 3600 mg/kg | - |
| | LD50 Oral | Rat | 3.25 g/kg | - |
| salicylic acid | LD50 Oral | Rat | 0.891 g/kg | - |
| 3-aminopropyldimethylamine | LD50 Dermal | Rabbit | 0.54 g/kg | - |
| | LD50 Oral | Rat | 1.02 g/kg | - |

Conclusion/Summary : There are no data available on the mixture itself.Acute toxicity estimates

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SECTION 11: Toxicological information

| Route | ATE value |
|----------------------|--------------|
| Oral | 2289.6 mg/kg |
| Dermal | 4860 mg/kg |
| Inhalation (gases) | 155172.4 ppm |
| Inhalation (vapours) | 23.99 mg/l |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|--------------------------|---------|-------|-----------------|-------------|
| xylene | Skin - Moderate irritant | Rabbit | - | 24 hours 500 mg | - |
| 2,4,6-tris (dimethylaminomethyl) phenol | Skin - Visible necrosis | Rabbit | - | 4 hours | 7 days |

Conclusion/Summary**Skin** : There are no data available on the mixture itself.**Eyes** : There are no data available on the mixture itself.**Respiratory** : There are no data available on the mixture itself.**Sensitisation**

| Product/ingredient name | Route of exposure | Species | Result |
|---|-------------------|------------|-------------|
| 2,4,6-tris (dimethylaminomethyl) phenol | skin | Guinea pig | Sensitising |

Conclusion/Summary**Skin** : There are no data available on the mixture itself.**Respiratory** : There are no data available on the mixture itself.**Mutagenicity****Conclusion/Summary** : There are no data available on the mixture itself.**Carcinogenicity****Conclusion/Summary** : There are no data available on the mixture itself.**Reproductive toxicity****Conclusion/Summary** : There are no data available on the mixture itself.**Teratogenicity****Conclusion/Summary** : There are no data available on the mixture itself.**Specific target organ toxicity (single exposure)**

| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|---|
| xylene | Category 3 | Not applicable. | Respiratory tract irritation |
| 2-methylpropan-1-ol | Category 3 | Not applicable. | Respiratory tract irritation and Narcotic effects |
| bisphenol A | Category 3 | Not applicable. | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

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| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|--|
| xylene | Category 2 | Not determined | central nervous system (CNS), kidneys and liver |
| ethylbenzene | Category 2 | Not determined | hearing organs |

Aspiration hazard

| Product/ingredient name | Result |
|-------------------------|--------------------------------|
| xylene | ASPIRATION HAZARD - Category 1 |
| ethylbenzene | ASPIRATION HAZARD - Category 1 |

Information on likely routes of exposure : Not available.

Potential acute health effects

- Inhalation** : May cause respiratory irritation.
- Ingestion** : May be fatal if swallowed and enters airways.
- Skin contact** : Causes severe burns. Defatting to the skin. May cause an allergic skin reaction.
- Eye contact** : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
nausea or vomiting
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness

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

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

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SECTION 11: Toxicological information**Potential delayed effects** : Not available.**Potential chronic health effects**

Not available.

Conclusion/Summary : Not available.**General** : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. 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.**Teratogenicity** : No known significant effects or critical hazards.**Developmental effects** : No known significant effects or critical hazards.**Fertility effects** : May damage fertility.**Other information** : Not available.

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains 2,4,6-tris(dimethylaminomethyl)phenol, N-(3-(trimethoxysilyl)propyl)ethylenediamine, m-phenylenebis(methylamine), 4,4'-isopropylidenediphenol, 3-aminopropyldimethylamine. May produce an allergic reaction.

SECTION 12: Ecological information**12.1 Toxicity**

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--|---|----------|
| ethylbenzene | Acute LC50 150 to 200 mg/l Fresh water | Fish - Lepomis macrochirus - Young of the year | 96 hours |
| bisphenol A | Chronic EC10 3.47 mg/l Marine water | Algae - Cochlodinium polykrikoides - Exponential growth phase | 72 hours |
| | Chronic NOEC 0.86 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 21 days |
| salicylic acid | Acute EC50 1147.57 mg/l Fresh water | Daphnia - Daphnia longispina - Neonate | 48 hours |
| | Chronic NOEC 5.6 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 21 days |

Conclusion/Summary : There are no data available on the mixture itself.**12.2 Persistence and degradability****Conclusion/Summary** : Not available.

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SECTION 12: Ecological information

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| benzyl alcohol | - | - | Readily |
| xylene | - | - | Readily |
| ethylbenzene | - | - | Readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---------------------------------|--------------------|-------------|-----------|
| benzyl alcohol | 1.1 | - | low |
| xylene | 3.16 | 7.4 to 18.5 | low |
| 2-methylpropan-1-ol | 0.76 | - | low |
| ethylbenzene | 3.15 | 79.43 | low |
| m-phenylenebis (methylamine) | 0.18 | 2.69 | low |
| bisphenol A | 3.32 | 43.65 | low |
| salicylic acid | 2.26 | - | low |
| 3-aminopropyldimethylamine | -0.352 | - | low |

12.4 Mobility in soilSoil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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 : Yes.**European waste catalogue (EWC)**

| Waste code | Waste designation |
|------------|---|
| 08 01 11* | waste paint and varnish containing organic solvents or other hazardous substances |

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.

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SECTION 13: Disposal considerations

| Type of packaging | European waste catalogue (EWC) | |
|-------------------|--------------------------------|-----------------|
| Container | 15 01 06 | mixed packaging |

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.

14. Transport information

| | ADR/RID | ADN | IMDG | IATA |
|--|-----------------------------|-----------------------------|--|--|
| 14.1 UN number | UN3469 | UN3469 | UN3469 | UN3469 |
| 14.2 UN proper shipping name | PAINT, FLAMMABLE, CORROSIVE | PAINT, FLAMMABLE, CORROSIVE | PAINT, FLAMMABLE, CORROSIVE | PAINT, FLAMMABLE, CORROSIVE |
| 14.3 Transport hazard class(es) | 3 (8) | 3 (8) | 3 (8) | 3 (8) |
| 14.4 Packing group | III | III | III | III |
| 14.5 Environmental hazards | Yes. | Yes. | Yes. | Yes. The environmentally hazardous substance mark is not required. |
| Marine pollutant substances | Not applicable. | Not applicable. | (Formaldehyde, polymer with N,N-dimethyl-1,3-propanediamine and phenol, bisphenol A) | Not applicable. |

Additional information

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Tunnel code : (D/E)

ADN : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

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 Annex II of Marpol and the IBC Code : Not applicable.

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SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU Regulation (EC) No. 1907/2006 (REACH)****Annex XIV - List of substances subject to authorisation****Annex XIV**

None of the components are listed.

Substances of very high concern

| Ingredient name | Intrinsic property | Status | Reference number | Date of revision |
|-----------------|-----------------------|-----------|------------------|------------------|
| bisphenol A | Toxic to reproduction | Candidate | - | 1/12/2017 |

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Restricted to professional users.

Other EU regulations**Ozone depleting substances (1005/2009/EU)**

Not listed.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

| Category |
|---|
| P5c: Flammable liquids 2 and 3 not falling under P5a or P5b E2: Hazardous to the aquatic environment - Chronic 2 6: Flammable (R10) 9ii: Toxic for the environment |

15.2 Chemical safety assessment

: No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

ATE = Acute Toxicity Estimate

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

DNEL = Derived No Effect Level

EUH statement = CLP-specific Hazard statement

PNEC = Predicted No Effect Concentration

RRN = REACH Registration Number

PBT = Persistent, Bioaccumulative and Toxic

vPvB = Very Persistent and Very Bioaccumulative

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

IMDG = International Maritime Dangerous Goods

IATA = International Air Transport Association

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

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SECTION 16: Other information

| Classification | Justification |
|--|---|
| Flam. Liq. 3, H226 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Repr. 1B, H360F (Fertility) STOT SE 3, H335 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 | 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. |
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H312 | Harmful 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. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |
| H360F | May damage fertility. |
| 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. |

Full text of classifications [CLP/GHS]

| | |
|--|---|
| Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Aquatic Chronic 2, H411 Aquatic Chronic 3, H412 Asp. Tox. 1, H304 EUH071 Eye Dam. 1, H318 Eye Irrit. 2, H319 Flam. Liq. 2, H225 Flam. Liq. 3, H226 Repr. 1B, H360F Skin Corr. 1B, H314 Skin Corr. 1C, H314 Skin Irrit. 2, H315 Skin Sens. 1, H317 Skin Sens. 1B, H317 STOT RE 2, H373 STOT SE 3, H335 | ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 ASPIRATION HAZARD - Category 1 Corrosive to the respiratory tract. SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 FLAMMABLE LIQUIDS - Category 2 FLAMMABLE LIQUIDS - Category 3 REPRODUCTIVE TOXICITY (Fertility) - Category 1B SKIN CORROSION/IRRITATION - Category 1B SKIN CORROSION/IRRITATION - Category 1C SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITISATION - Category 1 SKIN SENSITISATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 |
|--|---|

| | | | |
|--------------------------------|-------------------|---------------------------------------|--------------------------|
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SECTION 16: Other information

| | |
|-----------------|---|
| STOT SE 3, H336 | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3 |
|-----------------|---|

History

| | |
|--|---------------------------|
| Date of issue/ Date of revision | : 22 January 2018 |
| Date of previous issue | : 22 December 2017 |
| Prepared by | : EHS |
| Version | : 20.01 |

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