

SAFETY DATA SHEET



Hardtop Flexi Standard Comp B

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

1.1 Product identifier

Product name : Hardtop Flexi Standard Comp B
Product code : 1533
Product description : Hardener.
Product type : Liquid.
Other means of identification : Not available.

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

Use in coatings - Industrial use
 Use in coatings - Professional use

1.3 Details of the supplier of the safety data sheet

Jotun A/S
 P.O. Box 2021
 3202 Sandefjord Norway

Jotun Paints (Europe) Ltd.
 Stather Road Flixborough, Scunthorpe North
 Lincolnshire DN15 8RR England

Tel: + 47 33 45 70 00
 Fax: +47 33 45 72 42
 sdsjotun@jotun.no

Tel: +44 1724 400 000
 Fax: +44 1724 400 100
 csd.flixborough@jotun.co.uk

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Contact NHS Direct; phone 0845 4647 or 111. Open 24/7.

Supplier

Telephone number : +47 33 45 70 00 Jotun Norway (head office)

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 Sens. 1, H317
 STOT SE 3, H335

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

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

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

2.2 Label elements

Hazard pictograms



Signal word

: Warning.

SECTION 2: Hazards identification

Hazard statements	: H226 - Flammable liquid and vapour. H317 - May cause an allergic skin reaction. H332 - Harmful if inhaled. H335 - May cause respiratory irritation.
Precautionary statements	
General	: Not applicable.
Prevention	: P280 - Wear protective gloves. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 - Avoid breathing vapour.
Response	: P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. P302 + P352 - IF ON SKIN: Wash with plenty of water. P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention. P362 + P364 - Take off contaminated clothing and wash it before reuse.
Storage	: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P403 + P235 - Keep cool.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: EUH204 - Contains isocyanates. May produce an allergic reaction.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: As from August 24 2023 adequate training is required before industrial or professional use.
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.
Other hazards which do not result in classification	: None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures	: Mixture
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Product/ingredient name	Identifiers	%	Classification	Type
hexane, 1,6-diisocyanato-, homopolymer	REACH #: 01-2119488934-20 EC: 500-060-2 CAS: 28182-81-2	≤75	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	[1] [2]
2-methoxy-1-methylethyl acetate	REACH #: 01-2119475791-29 EC: 203-603-9 CAS: 108-65-6 Index: 607-195-00-7	<20	Flam. Liq. 3, H226 STOT SE 3, H336	[1] [2]
xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	<10	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319	[1] [2]

SECTION 3: Composition/information on ingredients

ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4 Index: 601-023-00-4	≤4.4	STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 3, H412 Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs) Asp. Tox. 1, H304 Aquatic Chronic 3, H412	[1] [2]
hexamethylene-di-isocyanate	REACH #: 01-2119457571-37 EC: 212-485-8 CAS: 822-06-0 Index: 615-011-00-1	≤0.3	Acute Tox. 4, H302 Acute Tox. 1, H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 STOT SE 3, H335 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

[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 if irritation occurs.
- 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. 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.
- 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 if adverse health effects persist or are severe. 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.

SECTION 4: First aid measures

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 : No specific data.

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

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.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Recommended: alcohol-resistant foam, CO₂, powders, water spray or mist.

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.

Hazardous combustion products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

5.3 Advice for firefighters

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

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.
- 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

Prevent the creation of flammable or explosive concentrations of vapours in air and avoid vapour concentrations higher than the occupational exposure limits.

In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.

Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type.

Care should be taken when re-opening partly-used containers. Precautions should be taken to minimise exposure to atmospheric humidity or water. CO₂ will be formed, which, in closed containers, could result in pressurisation. Keep away from heat, sparks and flame. No sparking tools should be used.

Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Put on appropriate personal protective equipment (see Section 8).

Never use pressure to empty. Container is not a pressure vessel.

Always keep in containers made from the same material as the original one.

Comply with the health and safety at work laws.

Do not allow to enter drains or watercourses.

Information on fire and explosion protection

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapour in all cases. In such circumstances they should wear a compressed air-fed

SECTION 7: Handling and storage

respirator during the spraying process and until such time as the particulates and solvent vapour concentration has fallen below the exposure limits.

- 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. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. 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.

Liquid paint and washing water with paint residues must not be emptied into drains or watercourses. It must be delivered to an approved local environmental protection station.

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

See Technical Data Sheet / packaging for further information.

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
hexane, 1,6-diisocyanato-, homopolymer	EH40/2005 WELs (United Kingdom (UK), 1/2020) [isocyanates, all, except methyl isocyanate] Inhalation sensitiser. STEL 15 minutes: 0.07 mg/m ³ (as -NCO). TWA 8 hours: 0.02 mg/m ³ (as -NCO).
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 . STEL 15 minutes: 100 ppm.

SECTION 8: Exposure controls/personal protection

xylylene	EH40/2005 WELs (United Kingdom (UK), 1/2020) [xylylene, o-,m-, p- or mixed isomers] Absorbed through skin. STEL 15 minutes: 441 mg/m ³ . TWA 8 hours: 50 ppm. TWA 8 hours: 220 mg/m ³ . STEL 15 minutes: 100 ppm.
ethylbenzene	EH40/2005 WELs (United Kingdom (UK), 1/2020) Absorbed through skin. STEL 15 minutes: 552 mg/m ³ . STEL 15 minutes: 125 ppm. TWA 8 hours: 100 ppm. TWA 8 hours: 441 mg/m ³ .
hexamethylene-di-isocyanate	EH40/2005 WELs (United Kingdom (UK), 1/2020) [isocyanates, all, except methyl isocyanate] Inhalation sensitiser. STEL 15 minutes: 0.07 mg/m ³ (as -NCO). TWA 8 hours: 0.02 mg/m ³ (as -NCO).

Biological exposure indices

Product/ingredient name	Exposure indices
xylylene	EH40/2005 BMGVs (United Kingdom (UK), 1/2020) [Xylene, o-, m-, p- or mixed isomers] BGV: 650 mmol/mol creatinine, methyl hippuric acid [in urine]. Sampling time: post shift.

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
Hexamethylene diisocyanate, oligomers	DNEL - Workers - Long term - Inhalation 0.5 mg/m ³ <u>Effects</u> : Local DNEL - Workers - Short term - Inhalation 1 mg/m ³ <u>Effects</u> : Local
2-methoxy-1-methylethyl acetate	DNEL - Workers - Long term - Dermal 153.5 mg/kg bw/day <u>Effects</u> : Systemic DNEL - Workers - Long term - Inhalation 275 mg/m ³ <u>Effects</u> : Systemic DNEL - General population - Consumers - Long term - Dermal 54.8 mg/kg bw/day <u>Effects</u> : Systemic DNEL - General population - Consumers - Long term - Inhalation 33 mg/m ³ <u>Effects</u> : Systemic DNEL - General population - Consumers - Long term - Oral

SECTION 8: Exposure controls/personal protection

	1.67 mg/kg bw/day <u>Effects</u> : Systemic
	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
xylene	DNEL - General population - Long term - Oral 5 mg/kg bw/day <u>Effects</u> : Systemic
	DNEL - General population - Long term - Inhalation 65.3 mg/m³ <u>Effects</u> : Local
	DNEL - General population - Long term - Inhalation 65.3 mg/m³ <u>Effects</u> : Systemic
	DNEL - General population - Long term - Dermal 125 mg/kg bw/day <u>Effects</u> : Systemic
	DNEL - Workers - Long term - Dermal 212 mg/kg bw/day <u>Effects</u> : Systemic
	DNEL - Workers - Long term - Inhalation 221 mg/m³ <u>Effects</u> : Local
	DNEL - Workers - Long term - Inhalation 221 mg/m³ <u>Effects</u> : Systemic
	DNEL - General population - Short term - Inhalation 260 mg/m³ <u>Effects</u> : Local
	DNEL - General population - Short term - Inhalation

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ethylbenzene	260 mg/m³ Effects: Systemic
	DNEL - Workers - Short term - Inhalation 442 mg/m³ Effects: Local
	DNEL - Workers - Short term - Inhalation 442 mg/m³ Effects: Systemic
	DMEL - Workers - Long term - Inhalation 442 mg/m³ Effects: Local
	DMEL - Workers - Short term - Inhalation 884 mg/m³ Effects: Systemic
	DNEL - General population - Long term - Oral 1.6 mg/kg bw/day Effects: Systemic
	DNEL - General population - Long term - Inhalation 15 mg/m³ Effects: Systemic
	DNEL - Workers - Long term - Inhalation 77 mg/m³ Effects: Systemic
	DNEL - Workers - Long term - Dermal 180 mg/kg bw/day Effects: Systemic
	DNEL - Workers - Short term - Inhalation 293 mg/m³ Effects: Local
hexamethylene-di-isocyanate	DNEL - Workers - Long term - Inhalation 0.035 mg/m³ Effects: Local
	DNEL - Workers - Short term - Inhalation 0.07 mg/m³ Effects: Local

PNECs

Product/ingredient name	Result
2-methoxy-1-methylethyl acetate	Fresh water 0.635 mg/l
	Marine 0.0635 mg/l
	Sewage Treatment Plant 100 mg/l
	Fresh water sediment 3.29 mg/kg dwt
	Marine water sediment 0.329 mg/kg dwt

SECTION 8: Exposure controls/personal protection

xylene	Soil 0.29 mg/kg dwt
	Fresh water 0.327 mg/l
	Marine 0.327 mg/l
	Sewage Treatment Plant 6.58 mg/l
	Fresh water sediment 12.46 mg/kg dwt
	Marine water sediment 12.46 mg/kg dwt
ethylbenzene	Soil 2.31 mg/kg dwt
	Fresh water 0.1 mg/l
	Marine 0.01 mg/l
	Sewage Treatment Plant 9.6 mg/l
	Fresh water sediment 13.7 mg/kg dwt
	Soil 2.68 mg/kg dwt
hexamethylene-di-isocyanate	Secondary Poisoning 20 mg/kg
	Fresh water 0.0774 mg/l
	Marine 0.00774 mg/l
	Sewage Treatment Plant 8.42 mg/l
	Fresh water sediment 0.01334 mg/kg dwt
	Marine water sediment 0.001334 mg/kg dwt
	Soil 0.0026 mg/kg dwt

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.
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SECTION 8: Exposure controls/personal protection

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 to EN 166 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves

Wear suitable gloves tested to EN 374.

Not recommended, gloves(breakthrough time) < 1 hour: neoprene (> 0.35 mm)

May be used, gloves(breakthrough time) 4 - 8 hours: butyl rubber (> 0.4 mm), PVC (> 0.5 mm)

Recommended, gloves(breakthrough time) > 8 hours: Viton® (> 0.7 mm), nitrile rubber (> 0.75 mm), 4H/Silver Shield® (> 0.07 mm), Teflon (> 0.35 mm), polyvinyl alcohol (PVA) (> 0.3 mm)

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

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 : Self-contained respiratory equipment must be worn by spray operator, even when good ventilation is provided. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask.

Environmental exposure controls : Do not allow to enter drains or watercourses.

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	: Colourless.
Odour	: Characteristic.
Odour threshold	: Not applicable.
Melting point/freezing point	: Not applicable.
Initial boiling point and boiling range	: Not available.
Flammability	: Not applicable.
Upper/lower flammability or explosive limits	: Not available.
Flash point	: Closed cup: 38°C (100.4°F)
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
pH	: Not applicable.
Viscosity	: Dynamic (room temperature): Not available. Kinematic (room temperature): Not available. Kinematic (40°C): >20.5 mm ² /s

Solubility(ies)

:

Media	Result
cold water	Not soluble
hot water	Not soluble

Partition coefficient: n-octanol/ water : Not applicable.

Vapour pressure : Not available.

Evaporation rate : Not available.

Density : 1.08 g/cm³

Vapour density : Not available.

Explosive properties : Not available.

Oxidising properties : Not available.

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : The product reacts slowly with water, resulting in the production of carbon dioxide.

10.2 Chemical stability : Stable under recommended storage and handling conditions (see Section 7).

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : In a fire, hazardous decomposition products may be produced.

10.5 Incompatible materials : Keep away from: oxidising agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

10.6 Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen, hydrogen cyanide, monomeric isocyanates.

Thermal decomposition (>200°C) may liberate anhydrides and relatively low concentrations of isocyanates.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Product/ingredient name**

2-methoxy-1-methylethyl acetate

Result**Rabbit - Dermal - LD50**>5000 mg/kg
OECD 402**Rat - Oral - LD50**

>5000 mg/kg

Rat - Inhalation - LCLo Vapour

23.5 mg/l [6 hours]

xylene

Rat - Oral - LD50

4300 mg/kg

Toxic effects: Liver - Other changes Kidney, Ureter, and Bladder - Other changes**Rabbit - Dermal - TDLo**

4300 mg/kg

Toxic effects: Skin After topical exposure - Corrosive**Rat - Inhalation - LC50 Vapour**

11 mg/l [4 hours]

ethylbenzene

Rat - Oral - LD50

3500 mg/kg

Toxic effects: Liver - Other changes Kidney, Ureter, and Bladder - Other changes**Rabbit - Dermal - LD50**

>5000 mg/kg

Rat - Male - Inhalation - LC50 Vapour

11 mg/l [4 hours]

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)
Hardtop Flexi Standard Comp B	N/A	11733.3	N/A	28.8	2.0
hexane, 1,6-diisocyanato-, homopolymer	N/A	N/A	N/A	N/A	1.5
xylene	4300	1100	N/A	11	N/A
ethylbenzene	3500	N/A	N/A	11	N/A
hexamethylene-di-isocyanate	746	N/A	N/A	0.124	N/A

Skin corrosion/irritation**Product/ingredient name**

hexane, 1,6-diisocyanato-, homopolymer

Result**Rabbit - Skin - Moderate irritant**Amount/concentration applied: 500 mg

xylene

Rat - Skin - Mild irritantDuration of treatment/exposure: 8 hoursAmount/concentration applied: 60 microliters

hexamethylene-di-isocyanate

Mammal - species unspecified - Skin - Mild irritant

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
hexane, 1,6-diisocyanato-, homopolymer	Rabbit - Eyes - Moderate irritant Amount/concentration applied: 100 mg
xylene	Rabbit - Eyes - Mild irritant Amount/concentration applied: 87 milligrams
hexamethylene-di-isocyanate	Mammal - species unspecified - Eyes - Mild irritant

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name	Result
hexane, 1,6-diisocyanato-, homopolymer	Mammal - species unspecified - skin Result: Sensitising
hexamethylene-di-isocyanate	Mammal - species unspecified - skin Result: Sensitising

Skin

Conclusion/Summary [Product] : Not available.

Ingredient name	Conclusion/Summary
hexane, 1,6-diisocyanato-, homopolymer	May cause an allergic skin reaction.
hexamethylene-di-isocyanate	May cause an allergic skin reaction.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

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**

hexane, 1,6-diisocyanato-, homopolymer
 2-methoxy-1-methylethyl acetate
 xylene
 hexamethylene-di-isocyanate

Result

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

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

ethylbenzene

Result

STOT RE 2, H373 (hearing organs)

Aspiration hazard**Product/ingredient name**

xylene
 ethylbenzene

Result

ASPIRATION HAZARD - Category 1
 ASPIRATION HAZARD - Category 1

Information on likely routes of exposure

Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : Harmful if inhaled. May cause respiratory irritation.
Skin contact : 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 : No specific data.
Inhalation : Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
Skin contact : Adverse symptoms may include the following:
 irritation
 redness
Ingestion : No specific data.

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

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product] : Not available.

General : 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 : No known significant effects or critical hazards.

SECTION 11: Toxicological information**Other information**

Not available.

SECTION 12: Ecological information**12.1 Toxicity****Product/ingredient name**

xylene

Result**Acute - LC50 - Marine water**Crustaceans - Daggerblade grass shrimp - *Palaemonetes pugio*
8500 µg/l [48 hours]Effect: Mortality**Acute - LC50 - Fresh water**Fish - Fathead minnow - *Pimephales promelas*Age: 31 days; Size: 18.4 mm; Weight: 0.077 g

13400 µg/l [96 hours]

Effect: Mortality

ethylbenzene

Acute - EC50

Daphnia

2.93 mg/l [48 hours]

Effect: Intoxication**Acute - LC50**

Fish

4.2 mg/l [96 hours]

Effect: Mortality**Acute - EC50 - Marine water**Algae - Diatom - *Skeletonema costatum*

7700 µg/l [96 hours]

Effect: Population**Conclusion/Summary [Product]** : Not available.**12.2 Persistence and degradability**

Not available.

Conclusion/Summary [Product] : Not available.

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

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
hexane, 1,6-diisocyanato-, homopolymer	5.54	367.7	Low
2-methoxy-1-methylethyl acetate	1.2	-	Low
xylene	3.12	8.1 to 25.9	Low
ethylbenzene	3.6	-	Low
hexamethylene-di-isocyanate	0.02	57.63	Low

SECTION 12: Ecological information**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
hexane, 1,6-diisocyanato-, homopolymer	No	N/A	No	No	No	N/A	No
2-methoxy-1-methylethyl acetate	No	N/A	N/A	No	N/A	N/A	N/A
xylene	No	N/A	No	No	No	N/A	No
ethylbenzene	N/A	N/A	N/A	Yes	N/A	N/A	N/A
hexamethylene-di-isocyanate	No	N/A	No	No	No	N/A	No

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.**Waste catalogue**

Waste code	Waste designation
08 01 11*	Waste paint and varnish containing organic solvents or other dangerous 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.

Type of packaging	Waste catalogue
CEPE Guidelines	15 01 10* packaging containing residues of or contaminated by hazardous substances

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
14.5 Environmental hazards	No.	No.	No.	No.

Additional information**ADR/RID**: **Hazard identification number** 30**Viscous liquid exception** This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.2.3.1.5.1.**Tunnel code** (D/E)

ADR/RID: Viscous substance. Not goods of class 3, ref. 2.2.3.1.5 (only applicable to receptacles < 450 litre capacity).

ADN: **Viscous liquid exception** This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.2.3.1.5.1.**IMDG**: **Emergency schedules** F-E, S-E**Viscous liquid exception** This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.3.2.5.

IMDG: Viscous substance. Transport in accordance with 2.3.2.5 of the IMDG Code (only applicable to receptacles < 450 litre capacity).

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.

SECTION 15: Regulatory information**Persistent Organic Pollutants**

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : As from August 24 2023 adequate training is required before industrial or professional use.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria**Category**

P5c

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

SECTION 16: Other information

Classification	Justification
Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	On basis of test data 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.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal 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.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Full text of classifications

Acute Tox. 1	ACUTE TOXICITY - Category 1
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - 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
Resp. Sens. 1	RESPIRATORY SENSITISATION - Category 1
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - 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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