

SAFETY DATA SHEET

Date of issue/Date of revision

: 22 March 2026

Version

: 1.11



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

1.1 Product identifier

Product name : HARDENER 008 7605

Product code : SDS-0087605

Other means of identification

SKU-00876050090; SKU-00876050330

PCN Use type : Industrial **UFI** : 2QH3-T13H-7008-334R

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

Product use : Industrial applications, Used by spraying.

**Use of the substance/
mixture** : Hardener.

Uses advised against : Product is not intended, labelled or packaged for consumer use.

1.3 Details of the supplier of the safety data sheet

Tikkurila Oyj
P.O. Box 53
FI-01301 VANTAA
FINLAND
Tel. +358 20 191 2000

**e-mail address of person
responsible for this SDS** : Product.Stewardship.EMEA@ppg.com

1.4 Emergency telephone number

Supplier

Tikkurila Oyj
+358 20 191 2000 (GMT +2) Mon-Fri 8-16

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]

Acute Tox. 4, H332
Resp. Sens. 1, H334
Skin Sens. 1, H317
STOT SE 3, H335

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

: May cause an allergic skin reaction.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.

Prevention

: Wear protective gloves. Avoid breathing vapour.

Response

: IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

Storage

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

Disposal

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

P280, P261, P304 + P340, P342 + P311, P403 + P233, P501

Hazardous ingredients

: Hexamethylene diisocyanate, oligomers (isocyanurate type);
4-isocyanatosulphonyltoluene and hexamethylene-di-isocyanate

Supplemental label elements

: 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

: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

: Not applicable.

Tactile warning of danger

: Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Product meets the criteria for endocrine disrupting properties according to Regulation (EC) No. 1907/2006.

: Based on available data, the classification criteria are not met.

Other hazards which do not result in classification

: None known.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	% by weight	Classification	Specific Conc. Limits, M-factors and ATEs	Type
Hexamethylene diisocyanate, oligomers (isocyanurate type)	REACH #: 01-2119485796-17 EC: 931-274-8 CAS: 28182-81-2	≥50 - ≤75	Acute Tox. 4, H332 Skin Sens. 1, H317 STOT SE 3, H335	ATE [Inhalation (dusts and mists)] = 1.5 mg/l	[1]
2-butoxyethyl acetate	REACH #: 01-2119475112-47 EC: 203-933-3 CAS: 112-07-2 Index: 607-038-00-2	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332	ATE [Oral] = 1880 mg/kg ATE [Dermal] = 1500 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
4-isocyanatosulphonyltoluene	REACH #: 01-2119980050-47 EC: 223-810-8 CAS: 4083-64-1 Index: 615-012-00-7	≥1.0 - <5.0	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 STOT SE 3, H335 EUH014	Skin Irrit. 2, H315: C ≥ 5% Eye Irrit. 2, H319: C ≥ 5% STOT SE 3, H335: C ≥ 5%	[1]
2-butoxyethanol	REACH #: 01-2119475108-36 EC: 203-905-0 CAS: 111-76-2 Index: 603-014-00-0	≤0.53	Acute Tox. 4, H302 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319	ATE [Oral] = 1200 mg/kg ATE [Inhalation (vapours)] = 3 mg/l	[1] [2]
hexamethylene-di-isocyanate	REACH #: 01-2119457571-37 EC: 212-485-8 CAS: 822-06-0 Index: 615-011-00-1	<0.10	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.	ATE [Oral] = 710 mg/kg ATE [Inhalation (vapours)] = 0.151 mg/l Resp. Sens. 1, H334: C ≥ 0.5% Skin Sens. 1, H317: C ≥ 0.5%	[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.

SUB codes represent substances without registered CAS Numbers.

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SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- 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 delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
- 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.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

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SECTION 5: Firefighting measures

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion products : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
sulfur oxides
Cyanate and isocyanate.
hydrogen cyanide

5.3 Advice for firefighters

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.

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. 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. 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. 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.

Special provisions : 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 (see Section 13). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in

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SECTION 6: Accidental release measures

an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.4 Reference to other sections

- : See Section 1 for emergency contact information.
- See Section 8 for information on appropriate personal protective equipment.
- See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

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

7.1 Precautions for safe handling

Protective measures

- : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitisation problems or asthma, allergies or chronic or recurrent respiratory disease 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. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

- : Store between the following temperatures: 5 to 25°C (41 to 77°F). Store in accordance with local regulations. 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. 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.

Precautions should be taken to minimise exposure to atmospheric humidity or water. CO₂ will be formed, which, in closed containers, could result in pressurisation.

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

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SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
2-butoxyethyl acetate	EU OEL (Europe, 1/2022) Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 133 mg/m ³ . STEL 15 minutes: 50 ppm. STEL 15 minutes: 333 mg/m ³ .
2-butoxyethanol	EU OEL (Europe, 1/2022) Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m ³ . STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m ³ .
hexamethylene-di-isocyanate	EU OEL (Europe, 3/2024) [diisocyanates] Absorbed through skin , Skin sensitiser , Inhalation sensitiser. STEL 15 minutes: 20 µg/m ³ (as isocyanates functional groups of the diisocyanate compounds.). TWA 8 hours: 10 µg/m ³ (as isocyanates functional groups of the diisocyanate compounds.).

Recommended monitoring procedures : 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/DMELs

Product/ingredient name	Exposure	Value	
Hexamethylene diisocyanate, oligomers (isocyanurate type)	DNEL - Workers - Long term - Inhalation	<i>Local</i>	0.5 mg/m ³
	DNEL - Workers - Short term - Inhalation	<i>Local</i>	1 mg/m ³
2-butoxyethyl acetate	DNEL - General population - Long term - Inhalation	<i>Systemic</i>	80 mg/m ³
	DNEL - Workers - Long term - Inhalation	<i>Systemic</i>	133 mg/m ³
	DNEL - General population - Short term - Inhalation	<i>Local</i>	200 mg/m ³
	DNEL - General population - Long term - Oral	<i>Systemic</i>	8.6 mg/kg bw/day
	DNEL - General population - Short term - Oral	<i>Systemic</i>	36 mg/kg bw/day
	DNEL - General population - Short term - Dermal	<i>Systemic</i>	72 mg/kg bw/day
	DNEL - General population - Long term - Dermal	<i>Systemic</i>	102 mg/kg bw/day
	DNEL - Workers - Short term - Dermal	<i>Systemic</i>	120 mg/kg bw/day
	DNEL - Workers - Long term - Dermal	<i>Systemic</i>	169 mg/kg bw/day
	DNEL - Workers - Short term - Inhalation	<i>Local</i>	333 mg/m ³
4-isocyanatosulphonyltoluene	DNEL - General population - Long term - Oral	<i>Systemic</i>	0.46 mg/kg bw/day
	DNEL - General population - Long term - Dermal	<i>Systemic</i>	0.46 mg/kg bw/day
	DNEL - General population - Long term - Inhalation	<i>Systemic</i>	0.8 mg/m ³
2-butoxyethanol	DNEL - Workers - Long term - Dermal	<i>Systemic</i>	0.92 mg/kg bw/day
	DNEL - Workers - Long term - Inhalation	<i>Systemic</i>	3.24 mg/m ³
	DNEL - General population - Long term - Oral	<i>Systemic</i>	6.3 mg/kg bw/day
	DNEL - General population - Short term - Oral	<i>Systemic</i>	26.7 mg/kg bw/day

English (GB)

Europe

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SECTION 8: Exposure controls/personal protection

hexamethylene-di-isocyanate	DNEL - General population - Long term - Inhalation	<i>Systemic</i>	59 mg/m ³
	DNEL - Workers - Long term - Inhalation	<i>Systemic</i>	98 mg/m ³
	DNEL - General population - Short term - Inhalation	<i>Local</i>	147 mg/m ³
	DNEL - Workers - Short term - Inhalation	<i>Local</i>	246 mg/m ³
	DNEL - General population - Short term - Inhalation	<i>Systemic</i>	426 mg/m ³
	DNEL - Workers - Short term - Inhalation	<i>Systemic</i>	1091 mg/m ³
	DNEL - Workers - Long term - Inhalation	<i>Local</i>	0.035 mg/m ³
	DNEL - Workers - Short term - Inhalation	<i>Local</i>	0.07 mg/m ³

PNECs

Product/ingredient name	Compartment Detail - Method	Value
Hexamethylene diisocyanate, oligomers (isocyanurate type)	Fresh water - Assessment Factors	0.127 mg/l
	Marine water - Assessment Factors	0.0127 mg/l
	Sewage Treatment Plant - Assessment Factors	88 mg/l
	Fresh water sediment - Equilibrium Partitioning	266701 mg/kg dwt
	Marine water sediment - Equilibrium Partitioning	26670 mg/kg dwt
2-butoxyethyl acetate	Soil - Equilibrium Partitioning	53182 mg/kg
	Fresh water	0.304 mg/l
	Marine water	0.0304 mg/l
	Fresh water sediment	2.03 mg/kg dwt
	Marine water sediment	0.203 mg/kg dwt
4-isocyanatosulphonyltoluene	Soil	0.42 mg/kg dwt
	Sewage Treatment Plant	90 mg/l
	Fresh water - Assessment Factors	0.03 mg/l
	Marine water - Assessment Factors	0.003 mg/l
	Sewage Treatment Plant - Assessment Factors	0.4 mg/l
2-butoxyethanol	Fresh water sediment - Equilibrium Partitioning	0.172 mg/kg dwt
	Marine water sediment - Equilibrium Partitioning	0.017 mg/kg dwt
	Soil - Equilibrium Partitioning	0.017 mg/kg dwt
	Fresh water - Assessment Factors	8.8 mg/l
	Marine water - Assessment Factors	0.88 mg/l
hexamethylene-di-isocyanate	Fresh water sediment - Equilibrium Partitioning	34.6 mg/kg
	Marine water sediment - Equilibrium Partitioning	3.46 mg/kg
	Soil - Equilibrium Partitioning	3.13 mg/kg
	Sewage Treatment Plant - Assessment Factors	463 mg/l
	Fresh water - Assessment Factors	0.0774 mg/l
hexamethylene-di-isocyanate	Marine water - Assessment Factors	0.00774 mg/l
	Sewage Treatment Plant - Assessment Factors	8.42 mg/l
	Fresh water sediment - Equilibrium Partitioning	0.01334 mg/kg dwt
	Marine water sediment - Equilibrium Partitioning	0.001334 mg/kg dwt
	Soil - Equilibrium Partitioning	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.

Individual protection measures

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SECTION 8: Exposure controls/personal protection

- 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 glasses with side shields. 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. 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.
- Gloves** : butyl rubber
- 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.
- 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** : Use an air-fed respirator unless a site-specific assessment determines that an air-fed respirator is not necessary, in which case the results of the risk assessment should be utilized to determine whether respiratory protection is necessary and what type of protection is appropriate. 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
- Restrictions on use** : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.
- 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.

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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 : Clear.
Odour : Characteristic.
Melting point/freezing point : Not determined.
Boiling point or initial boiling point and boiling range : >37.78°C
Flammability : Not determined. There are no data available on the mixture itself.
Lower and upper explosion limit : Not available.
Flash point : Closed cup: 71°C
Auto-ignition temperature :

Ingredient name	°C	°F	Method
2-butoxyethyl acetate	340	644	

Decomposition temperature : Stable under recommended storage and handling conditions (see Section 7).

pH : Not applicable. insoluble in water.

Viscosity : Dynamic (room temperature): Not available.
 Kinematic (room temperature): Not available.
 Kinematic (40°C): >21 mm²/s

Solubility :

Media	Result
cold water	Not soluble

Partition coefficient n-octanol/water (log Pow) : Not applicable.

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
2-butoxyethyl acetate	0.23	0.031				

Relative density : 1.06

Particle characteristics

Median particle size : Not applicable.

9.2 Other information

9.2.1 Information with regard to physical hazard classes

Explosive properties : The product itself is not explosive, but the formation of an explosible mixture of vapour or dust with air is possible.

Oxidising properties : Product does not present an oxidizing hazard.

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** : In a fire, hazardous decomposition products may be produced.
Refer to protective measures listed in sections 7 and 8.
- 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** : Depending on conditions, decomposition products may include the following materials:
Cyanate and isocyanate. carbon oxides nitrogen oxides sulfur oxides hydrogen cyanide

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly.

Harmful if inhaled.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

May cause respiratory irritation.

Acute toxicity

Product/ingredient name	Result	Dose / Exposure
Hexamethylene diisocyanate, oligomers (isocyanurate type)	Rat - Female - Oral - LD50	>2500 mg/kg
2-butoxyethyl acetate	Rabbit - Dermal - LD50 Rabbit - Dermal - LD50 <i>Toxic effects:</i> Kidney, Ureter, and Bladder - Hematuria Kidney, Ureter, and Bladder - Other changes in urine composition Blood - Normocytic anemia	>2000 mg/kg 1500 mg/kg
4-isocyanatosulphonyltoluene	Rat - Oral - LD50 Rat - Oral - LD50 <i>Toxic effects:</i> Gastrointestinal - Other changes	1880 mg/kg 2234 mg/kg
2-butoxyethanol	Rat - Oral - LD50 Rat - Dermal - LD50 Rat - Inhalation - LC50 Vapour	1200 mg/kg >2000 mg/kg 3 mg/l [4 hours]
hexamethylene-di-isocyanate	Rat - Oral - LD50 Rabbit - Dermal - LD50 Rat - Inhalation - LC50 Vapour Rat - Inhalation - LC50 Dusts and mists	0.71 g/kg 0.57 g/kg 151 mg/m ³ [4 hours] 124 mg/m ³ [4 hours]

Acute toxicity estimates

Route	ATE value
Oral	4825.77 mg/kg
Dermal	3850.35 mg/kg
Inhalation (vapours)	27.23 mg/l
Inhalation (dusts and mists)	2.54 mg/l

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SECTION 11: Toxicological information

Conclusion/Summary : Harmful if inhaled.

Irritation/Corrosion

Product/ingredient name	Result
2-butoxyethanol	Rabbit - Skin - Moderate irritant Duration of treatment/exposure: 4 hours Observation period: 28 days
-	Rabbit - Eyes - Irritant Duration of treatment/exposure: 24 hours Observation period: 21 days

Conclusion/Summary

Skin : Based on available data, the classification criteria are not met.

Eyes : Based on available data, the classification criteria are not met.

Respiratory : Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Conclusion/Summary

Skin : May cause an allergic skin reaction.

Respiratory : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Hexamethylene diisocyanate, oligomers (isocyanurate type)	Category 3	-	Respiratory tract irritation
4-isocyanatosulphonyltoluene	Category 3	-	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	-	Respiratory tract irritation

Conclusion/Summary

May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure : Not available.

Potential acute health effects

Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Ingestion : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Eye contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

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SECTION 11: Toxicological information

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Ingestion : No specific data.

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

Eye contact : No specific data.

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

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

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.

Other information : Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitisation of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitised persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Persons with a history of skin sensitisation problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Repeated exposure may lead to permanent respiratory disability. Moisture-sensitive material.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

There are no data available on the mixture itself.
Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as hazardous to the environment.

12.1 Toxicity

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SECTION 12: Ecological information

Product/ingredient name	Result	Species	Dose / Exposure
Hexamethylene diisocyanate, oligomers (isocyanurate type)	Acute - LC50	Fish - <i>Danio rerio (zebra fish)</i>	>100 mg/l [96 hours]
	Acute - EC50	Daphnia - <i>daphnia magna</i>	>100 mg/l [48 hours]
	Acute - EC50	Algae - <i>scenedesmus subspicatus</i>	>1000 mg/l [72 hours]
2-butoxyethyl acetate	Acute - LC50	Fish	28 mg/l [96 hours]
2-butoxyethanol	Acute - LC50	Fish	1474 mg/l [96 hours]
	Chronic - NOEC	Fish	>100 mg/l [21 days]

Conclusion/Summary : Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose / Inoculum
2-butoxyethyl acetate	OECD 301A	97% [7 days] - Readily	

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylene diisocyanate, oligomers (isocyanurate type)	-	-	Not readily
2-butoxyethyl acetate	-	-	Readily
2-butoxyethanol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Hexamethylene diisocyanate, oligomers (isocyanurate type)	5.54	3.2	Low
2-butoxyethyl acetate	1.51	-	Low
2-butoxyethanol	0.81	-	Low
hexamethylene-di-isocyanate	0.02	-	Low

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logK _{oc}	K _{oc}
2-butoxyethyl acetate	2.1	112.842
4-isocyanatosulphonyltoluene	1.5	31.6836
2-butoxyethanol	1.8	67.3685
hexamethylene-di-isocyanate	1.4	23.8009

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

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SECTION 12: Ecological information

12.7 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 :

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.

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. 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 or ID number	Not regulated.	9003	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	SUBSTANCES WITH A FLASH-POINT ABOVE 60 °C AND NOT MORE THAN 100 °C (2-butoxyethyl acetate)	-	-
14.3 Transport hazard class(es)	-	9	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	Yes.	No.	No.

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SECTION 14: Transport information

Marine pollutant substances	Not applicable.	Not applicable.	Not applicable.	Not applicable.
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Additional information

ADR/RID : None identified.

ADN : The product is only regulated as a dangerous good when transported in tank vessels.

IMDG : None identified.

IATA : None identified.

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 Maritime transport in bulk according to IMO instruments : Not applicable.

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](#)

None of the components are listed.

[Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles](#)

Product/ingredient name	Entry Number (REACH)
HARDENER 008 7605 hexamethylene-di-isocyanate	3 74

Labelling : Not applicable.

Other EU regulations

Explosive precursors : Not applicable.

[Ozone depleting substances \(EU 2024/590\)](#)

Not listed.

[Persistent Organic Pollutants](#)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

15.2 Chemical safety assessment : No Chemical Safety Assessment has been carried out.

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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

Full text of abbreviated H statements

H302	Harmful if swallowed.
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.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
EUH014	Reacts violently with water.

Full text of classifications [CLP/GHS]

Acute Tox. 1	ACUTE TOXICITY - Category 1
Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Resp. Sens. 1	RESPIRATORY SENSITISATION - Category 1
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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Disclaimer

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