

SAFETY DATA SHEET

A1000 HARDENER

Section 1. Identification

GHS product identifier : A1000 HARDENER
SDS code : 12100000D

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

Identified uses
Paint. Professional use Industrial use
Uses advised against
All other uses

Product use : Solvent borne coating for exterior use.

Supplier's details

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Section 2. Hazards identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
 SKIN SENSITIZATION - Category 1
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

GHS label elements, including precautionary statements

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 - Highly flammable liquid and vapor.
 H317 - May cause an allergic skin reaction.
 H319 - Causes serious eye irritation.
 H335 - May cause respiratory irritation.
 H336 - May cause drowsiness or dizziness.

Precautionary statements

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Section 2. Hazards identification

- Prevention** : P280 - Wear protective gloves. Wear eye or face protection.
P210 - Keep away from heat, sparks and hot surfaces. No smoking.
P241 - Use explosion-proof electrical, ventilating or lighting equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P261 - Avoid breathing vapor.
- Response** : P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice or attention.
- 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.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
ethyl acetate	≥25 - ≤50	141-78-6
n-butyl acetate	≥25 - ≤50	123-86-4
Hexamethylene diisocyanate, oligomers	≥10 - ≤25	28182-81-2
2-methoxy-1-methylethyl acetate	≤10	108-65-6
xylene	≤5	1330-20-7
4-isocyanatosulphonyltoluene	≤0.3	4083-64-1
hexamethylene-di-isocyanate	≤0.1	822-06-0

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 and hence require reporting in this section.

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

Chemical formula : Not applicable.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or

Section 4. First aid measures

- 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 necessary, call a poison center or physician. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- 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.
- 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. 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 thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

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.

Section 6. Accidental release measures

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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized 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".

Environmental precautions : Avoid dispersal of spilled 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).

Methods and materials 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 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor 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.
- 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 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
ethyl acetate	Workplace Safety and Health Act (Singapore, 2/2006). PEL (long term): 1440 mg/m ³ 8 hours. PEL (long term): 400 ppm 8 hours.
n-butyl acetate	Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 950 mg/m ³ 15 minutes. PEL (short term): 200 ppm 15 minutes. PEL (long term): 713 mg/m ³ 8 hours. PEL (long term): 150 ppm 8 hours.
xylene	Workplace Safety and Health Act (Singapore, 2/2006). [Xylene] PEL (short term): 651 mg/m ³ 15 minutes. PEL (short term): 150 ppm 15 minutes. PEL (long term): 434 mg/m ³ 8 hours. PEL (long term): 100 ppm 8 hours.
hexamethylene-di-isocyanate	Workplace Safety and Health Act (Singapore, 2/2006). PEL (long term): 0.034 mg/m ³ 8 hours. PEL (long term): 0.005 ppm 8 hours.

Section 8. Exposure controls/personal protection

- 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, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- 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.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid.
- Color** : Colorless.
- Odor** : Characteristic.
- Odor threshold** : Not available.
- pH** : Not available. [DIN EN 1262]
- Melting point/freezing point** : Not available.
- Boiling point, initial boiling point, and boiling range** : Not available.

Section 9. Physical and chemical properties

Flash point : Closed cup: 18°C (64.4°F) [Pensky-Martens]

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
<input checked="" type="checkbox"/> ethyl acetate	81.59	10.9	DIN EN 13016-2			
toluene	23.17	3.1				
n-butyl acetate	11.25	1.5				
ethylbenzene	9.3	1.2				
chlorobenzene	8.8	1.2				
xylene	6.7	0.89				
2-methoxy-1-methylethyl acetate	2.7	0.36				
hexamethylene-di-isocyanate	0.01	0.0013				
2,6-di-tert-butyl-p-cresol	0.01	0.0013				
tosyl chloride	0.00098	0.00013				
4-isocyanatosulphonyltoluene	0.00019	0.000025				
Hexamethylene diisocyanate, oligomers	0.000018	0.0000024	EU A.4			

Relative vapor density : Not available.

Density : 0.951 g/cm³ [DIN EN ISO 2811-1]

Solubility(ies) :

Media	Result
<input checked="" type="checkbox"/> Cold water	Not soluble [OESO (TG 105)]

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

Auto-ignition temperature :

Ingredient name	°C	°F	Method
<input checked="" type="checkbox"/> 2-methoxy-1-methylethyl acetate	333	631.4	EU A.15
n-butyl acetate	415	779	
ethyl acetate	426.67	800	
xylene	432	809.6	
ethylbenzene	432.22	810	
hexamethylene-di-isocyanate	454	849.2	
toluene	480	896	
chlorobenzene	590	1094	

Decomposition temperature : Not available.

Viscosity : Kinematic (room temperature): 11 mm²/s (11 cSt) [DIN EN ISO 3219]
Kinematic (40°C (104°F)): 6 mm²/s (6 cSt) [DIN EN ISO 3219]

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
SADT	: Not available.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	
ethyl acetate	LC50 Inhalation Gas.	Rat	1600 ppm	8 hours	
	LC50 Inhalation Vapor	Mouse	45 g/m ³	2 hours	
	LD50 Intraperitoneal	Mouse	709 mg/kg	-	
	LD50 Oral	Guinea pig	5.5 g/kg	-	
	LD50 Oral	Guinea pig	5500 mg/kg	-	
	LD50 Oral	Mouse	4.1 g/kg	-	
	LD50 Oral	Mouse	4100 mg/kg	-	
	LD50 Oral	Rabbit	4935 mg/kg	-	
	LD50 Oral	Rat	5620 mg/kg	-	
n-butyl acetate	LD50 Subcutaneous	Guinea pig	3 g/kg	-	
	LC50 Inhalation Gas.	Rat	390 ppm	4 hours	
	LC50 Inhalation Vapor	Mouse	6 g/m ³	2 hours	
	LD50 Dermal	Rabbit	>17600 mg/kg	-	
	LD50 Intraperitoneal	Mouse	1230 mg/kg	-	
	LD50 Oral	Guinea pig	4700 mg/kg	-	
	LD50 Oral	Mouse	6 g/kg	-	
	LD50 Oral	Rabbit	3200 mg/kg	-	
	LD50 Oral	Rat	10768 mg/kg	-	
Hexamethylene diisocyanate, oligomers xylene	LC50 Inhalation Dusts and mists	Rat	18500 mg/m ³	1 hours	
	LC50 Inhalation Gas.	Rat	6700 ppm	4 hours	
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours	
	LC50 Inhalation Gas.	Rat	6670 ppm	4 hours	
	LD50 Intraperitoneal	Mouse	1548 mg/kg	-	
	LD50 Intraperitoneal	Mouse	1548 mg/kg	-	
	LD50 Intraperitoneal	Rat	2459 mg/kg	-	
	LD50 Oral	Mouse	2119 mg/kg	-	
	LD50 Oral	Rat	4300 mg/kg	-	
	LD50 Oral	Rat	4300 mg/kg	-	
	LD50 Subcutaneous	Rat	1700 mg/kg	-	
	LD50 Intraperitoneal	Rat	775 mg/kg	-	
	LD50 Oral	Rat	2234 mg/kg	-	
	4-isocyanatosulphonyltoluene	LC50 Inhalation Dusts and mists	Rat	124 mg/m ³	4 hours
		LC50 Inhalation Dusts and mists	Rat	462 mg/m ³	4 hours

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	LD50 Dermal	Rabbit	570 µL/kg	-
	LD50 Intravenous	Mouse	5600 µg/kg	-
	LD50 Oral	Mouse	350 mg/kg	-
	LD50 Oral	Rat	710 µL/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
Hexamethylene diisocyanate, oligomers	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
xylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 UI	-
4-isocyanatosulphonyltoluene	Skin - Moderate irritant	Rabbit	-	100 %	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	100 UI	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 UI	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
ethyl acetate	Category 3	-	Narcotic effects
n-butyl acetate	Category 3	-	Narcotic effects
Hexamethylene diisocyanate, oligomers	Category 3	-	Respiratory tract irritation
2-methoxy-1-methylethyl acetate	Category 3	-	Narcotic effects
xylene	Category 3	-	Respiratory tract irritation
4-isocyanatosulphonyltoluene	Category 3	-	Respiratory tract irritation
hexamethylene-di-isocyanate	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1

Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Delayed and immediate effects and also 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.

- 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 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ethyl acetate	Acute EC50 2500000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 1600000 µg/l Fresh water	Crustaceans - Asellus aquaticus	48 hours
	Acute LC50 750000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 175000 µg/l Fresh water	Daphnia - Daphnia cucullata	48 hours
	Acute LC50 154000 µg/l Fresh water	Daphnia - Daphnia cucullata	48 hours
	Acute LC50 560000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 230000 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 295000 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 212500 µg/l Fresh water	Fish - Heteropneustes fossilis	96 hours
	Acute LC50 484000 µg/l Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 425300 µg/l Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 230000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 12 mg/l Fresh water	Daphnia - Daphnia magna	21 days
Chronic NOEC 2400 µg/l Fresh water	Daphnia - Daphnia magna	21 days	
Chronic NOEC 75.6 mg/l Fresh water	Fish - Pimephales promelas - Embryo	32 days	
n-butyl acetate	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 62000 µg/l Fresh water	Fish - Danio rerio	96 hours
	Acute LC50 100000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 185000 µg/l Marine water	Fish - Menidia beryllina	96 hours
	Acute LC50 18000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
xylene	Acute EC50 90 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 16940 µg/l Fresh water	Fish - Carassius auratus	96 hours
	Acute LC50 15700 µg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 20870 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 19000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours	

Persistence/degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
ethyl acetate	0.68	30	low
n-butyl acetate	2.3	-	low
Hexamethylene diisocyanate, oligomers	5.54	367.7	low
2-methoxy-1-methylethyl acetate	1.2	-	low
xylene	3.12	8.1 to 25.9	low
hexamethylene-di-isocyanate	0.02	57.63	low

Mobility in soil

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Soil/water partition coefficient (K_{oc}) : Not available.

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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. Vapor 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3 	3 
Packing group	II	II	II
Environmental hazards	No.	No.	No.

Additional information

IMDG : Emergency schedules F-E, _S-E_
IMDG Code Segregation group Not applicable

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.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product : SS586: Specification for hazard communication for hazardous chemicals and dangerous goods.

Singapore - hazardous chemicals under government control

Ingredient name	Status
Hexamethylene diisocyanate, oligomers	Listed

Section 16. Other information

History

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Key to abbreviations :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- SGG = Segregation Group
- UN = United Nations

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

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Section 16. Other information