

SAFETY DATA SHEET



8-450 HS420 Hardener Medium

Section 1. Identification

Product name : 8-450 HS420 Hardener Medium
Product type : Liquid.

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

Identified uses

Use in coatings - Hardener.

Uses advised against

Not applicable.

Supplier

Manufacturer : Valspar b.v.
Zuiveringweg 89
8243 PE Lelystad
The Netherlands
tel: +31 (0)320 292200
fax: +31 (0)320 292201

Emergency telephone number : Call: +31 (0)320 292200 (during daytime)

Supplier's details : DBNZ Coatings Limited
176 Ossie James Drive
Hamilton Airport, 3282
NEW ZEALAND
T: +64 7847 0944
E: info@dbnz.co.nz

Emergency telephone number (with hours of operation) : New Zealand Poisons Information Centre: 0800 764766 (24 hrs)
CALL: +(64)-98010034 (Hours of operation - 24 hours)

e-mail address of person responsible for this SDS : msds@de-beer.com

Section 2. Hazards identification

HSNO Classification : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2
RESPIRATORY SENSITISATION - Category 1
SKIN SENSITISATION - Category 1
CARCINOGENICITY - Category 2
REPRODUCTIVE TOXICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

This material is classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

This material is classified as DANGEROUS GOODS according to criteria in New Zealand Standard 5433:2012 Transport of Dangerous Goods on Land.

GHS label elements

Signal word : Danger

Version : 1

Date of issue/Date of revision : 7/17/2023

Section 2. Hazards identification

Hazard statements : Flammable liquid and vapour.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Do not breathe vapour or spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Storage : Store locked up.

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

Symbol :



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

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
Hexamethylene diisocyanate, oligomers	≥60 - ≤75	28182-81-2
n-butyl acetate	≥10 - ≤22	123-86-4
xylene	≤10	1330-20-7
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	≤5	53880-05-0
ethylbenzene	≤3	100-41-4
Solvent naphtha (petroleum), light arom.	<2.5	64742-95-6

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.

Section 4. First aid measures

Description of necessary first aid measures

- 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. In the event of any complaints or symptoms, avoid further exposure.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- 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.
- 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

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

Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin** : Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Eyes** : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 4. First aid measures

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

- Specific treatments** : No specific treatment.
- 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.
- 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. Firefighting measures

Extinguishing media

- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.

Specific hazards arising from the chemical : 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. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

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

Hazchem code : 3Y

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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 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".

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).

Methods and material for containment and cleaning up

Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt 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 sensitisation problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. 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 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Hexamethylene diisocyanate, oligomers	<p>NZ HSWA 2015 - GRWM 2016 (New Zealand, 4/2022). [isocyanates, all (as - NCO)] Skin sensitiser. Inhalation sensitiser. Notes: interim</p> <p>WES-TWA: 0.02 mg/m³, (measured as - NCO) 8 hours. Form: The Inhalable Fraction and Vapour (ifv) notation is used when a material exerts sufficient vapour pressure such that it may be present in both particle and vapour phases, with each contributing to a significant portion of exposure.</p> <p>WES-STEL: 0.07 mg/m³, (measured as - NCO) 15 minutes. Form: The Inhalable Fraction and Vapour (ifv) notation is used when a material exerts sufficient vapour pressure such that it may be present in both particle and vapour phases, with each contributing to a significant portion of exposure.</p>
n-butyl acetate	<p>NZ HSWA 2015 - GRWM 2016 (New Zealand, 4/2022).</p> <p>WES-TWA: 150 ppm 8 hours. WES-TWA: 713 mg/m³ 8 hours. WES-STEL: 950 mg/m³ 15 minutes. WES-STEL: 200 ppm 15 minutes.</p>
xylene	<p>NZ HSWA 2015 - GRWM 2016 (New Zealand, 4/2022). [xylene (o-, m-, p-isomers)] Notes: See Notice of Intended Changes.</p> <p>WES-TWA: 217 mg/m³, 0 times per shift, 8 hours. WES-TWA: 50 ppm, 0 times per shift, 8 hours.</p>
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	<p>NZ HSWA 2015 - GRWM 2016 (New Zealand, 4/2022). [isocyanates, all (as - NCO)] Skin sensitiser. Inhalation sensitiser. Notes: interim</p> <p>WES-TWA: 0.02 mg/m³, (measured as - NCO) 8 hours. Form: The Inhalable Fraction and Vapour (ifv) notation is used when a material exerts sufficient vapour pressure such that it may be present in both particle and vapour phases, with each contributing to a significant portion of exposure.</p> <p>WES-STEL: 0.07 mg/m³, (measured as - NCO) 15 minutes. Form: The Inhalable Fraction and Vapour (ifv) notation is used when a material exerts sufficient vapour pressure such that it may be present in both particle and vapour phases, with each contributing to a significant portion of exposure.</p>
ethylbenzene	<p>NZ HSWA 2015 - GRWM 2016 (New Zealand, 4/2022). Absorbed through skin.</p> <p>WES-STEL: 176 mg/m³ 15 minutes. WES-STEL: 40 ppm 15 minutes. WES-TWA: 88 mg/m³ 8 hours. WES-TWA: 20 ppm 8 hours.</p>

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, vapour 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. Recommended: If inhalation hazards exist, a full-face respirator may be required instead.
- 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. > 8 hours (breakthrough time): Recommended EN 374 butyl rubber polyvinyl alcohol (PVA) Viton® ≥ 0.7 mm
4 - 8 hours (breakthrough time): Recommended EN 374 neoprene ≥ 0.7 mm
< 1 hour (breakthrough time): Conditionally suitable materials for protective gloves; EN 374: Nitrile rubber - NBR (≥ 0.35 mm). Only suitable as splash protection. Only suitable for brief exposure. In the event of contamination, change protective gloves immediately.
- 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. Recommended: Cotton or cotton/synthetic overalls or coveralls are normally suitable.
- 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. Recommended: full-face mask supplied-air respirator

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

- Physical state** : Liquid.

Section 9. Physical and chemical properties and safety characteristics

Colour	: Colourless.
Odour	: Fruity.
Odour threshold	: Not available.
pH	: Not applicable.
Melting point/freezing point	: Not applicable.
Boiling point, initial boiling point, and boiling range	: >100°C (>212°F)
Flash point	: Closed cup: 26°C (78.8°F)
Evaporation rate	: 1 (butyl acetate = 1)
Flammability	: Not available.
Lower and upper explosion limit/flammability limit	: Lower: 0.8% Upper: 7.6%
Vapour pressure	: 1.5 kPa (11.25 mm Hg)
Relative vapour density	: 4 [Air = 1]
Relative density	: 1.071
Density	: 1.071 g/cm ³
Solubility(ies)	:

Media	Result
cold water	Not soluble
hot water	Not soluble

Solubility in water	: Not applicable.
Miscible with water	: No.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: 415°C (779°F)
Decomposition temperature	: Not applicable.
Viscosity	: Kinematic (40°C (104°F)): 4 mm ² /s (4 cSt)

Particle characteristics

Median particle size	: Not applicable.
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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 pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidising materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on likely routes of exposure

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

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

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

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene diisocyanate, oligomers	LC50 Inhalation Dusts and mists	Rat	18500 mg/m ³	1 hours
	LC50 Inhalation Dusts and mists	Rat	2.18 mg/l	4 hours
	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
n-butyl acetate	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Gas.	Rat	390 ppm	4 hours
	LC50 Inhalation Vapour	Rat	>21.1 mg/l	4 hours
	LD50 Dermal	Rabbit	>14112 mg/kg	-
xylene	LD50 Oral	Rat	10760 mg/kg	-
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapour	Rat - Male	29000 mg/l	4 hours
	LD50 Dermal	Rabbit	12126 mg/kg	-
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	LD50 Oral	Rat	4300 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
	LD50 Oral	Rat	>14000 mg/kg	-
	LC50 Inhalation Vapour	Rat	6350 ppm	4 hours
ethylbenzene	LD50 Dermal	Rabbit	12126 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-
	LC50 Inhalation Vapour	Rat	6193 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>3160 mg/kg	-

Section 11. Toxicological information

	LD50 Oral	Rat	3592 mg/kg	-
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Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Hexamethylene diisocyanate, oligomers	Eyes - Mild irritant	Rabbit	-	-	-
n-butyl acetate	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	4 hours	-
	Skin - Moderate irritant	Rabbit	-	500 mg	-
	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
xylene	Eyes - Mild irritant	Rabbit	-	87 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 mg	-
	Skin - Mild irritant	Rat	-	8 hours 60 uL	-
	Skin - Moderate irritant	Rabbit	-	100 %	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-
ethylbenzene	Eyes - Severe irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 15 mg	-
Solvent naphtha (petroleum), light arom.	Eyes - Mild irritant	Rabbit	-	24 hours 100 uL	-

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Hexamethylene diisocyanate, oligomers	skin	Guinea pig	Sensitising
	skin	Mouse	Sensitising

Potential chronic health effects

General	: May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Inhalation	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Ingestion	: No known significant effects or critical hazards.
Skin contact	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Eye contact	: No known significant effects or critical hazards.
Carcinogenicity	: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: Suspected of damaging the unborn child.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: Suspected of damaging fertility.

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene diisocyanate, oligomers	Sub-chronic NOAEL Inhalation Dusts and mists	Rat - Male, Female	3.3 mg/m ³	90 days; 6 hours per day

Carcinogenicity

Not available.

Mutagenicity

Section 11. Toxicological information

Product/ingredient name	Test	Experiment	Result
Hexamethylene diisocyanate, oligomers	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/-	Negative

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
xylene ethylbenzene	Category 2	-	-
	Category 2	-	-

Aspiration hazard

Product/ingredient name
Solvent naphtha (petroleum), light arom.

Numerical measures of toxicity

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)
8-450 HS420 Hardener Medium	6664.8	14662.5	27174.1	354.4	3.1
Hexamethylene diisocyanate, oligomers	N/A	N/A	N/A	N/A	2.18
n-butyl acetate	10760	N/A	4500	N/A	N/A
xylene	500	1100	N/A	29000	N/A
ethylbenzene	3500	12126	N/A	11	N/A
Solvent naphtha (petroleum), light arom.	3592	N/A	N/A	6.193	N/A

Section 12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic and terrestrial toxicity

Product/ingredient name	Result	Species	Exposure
Hexamethylene diisocyanate, oligomers	Acute EC50 >1000 mg/l	Algae - Scenedesmus subspicatus	72 hours
	Acute EC50 >100 mg/l	Daphnia - Daphnia magna	48 hours
n-butyl acetate	Acute LC50 >100 mg/l	Fish - Danio rerio	96 hours
	Acute EC50 397 mg/l	Algae - Selenastrum capricornutum	72 hours
	Acute EC50 44 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours

Section 12. Ecological information

xylylene	Acute LC50 18 mg/l Acute NOEC 200 mg/l Acute EC50 1 to 10 mg/l Acute EC50 1 to 10 mg/l Acute LC50 8500 µg/l Marine water	Fish - Pimephales promelas Algae Algae Daphnia - Daphnia magna Crustaceans - Palaemonetes pugio	96 hours 72 hours 72 hours 48 hours 48 hours
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	Acute LC50 13400 µg/l Fresh water Acute EC50 >100 mg/l	Fish - Pimephales promelas Daphnia	96 hours 48 hours
ethylbenzene	Acute EC50 >100 mg/l Acute EC50 4900 µg/l Marine water Acute EC50 7700 µg/l Marine water Acute EC50 6.53 mg/l Marine water	Fish Algae - Skeletonema costatum Algae - Skeletonema costatum Crustaceans - Artemia sp. - Nauplii	96 hours 72 hours 96 hours 48 hours
Solvent naphtha (petroleum), light arom.	Acute EC50 2.93 mg/l Fresh water Acute LC50 4200 µg/l Fresh water Acute EC50 2.9 mg/l Acute EC50 3.2 mg/l Acute LC50 9.2 mg/l Acute NOEC >1 mg/l	Daphnia - Daphnia magna - Neonate Fish - Oncorhynchus mykiss Algae - Pseudokirchneriella subcapitata Daphnia - Daphnia magna Fish - Oncorhynchus mykiss Algae - Pseudokirchneriella subcapitata	48 hours 96 hours 72 hours 48 hours 96 hours 72 hours

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Hexamethylene diisocyanate, oligomers n-butyl acetate	EU 67/548/EEC ANNEX V, C.4.E. OECD 301D Ready Biodegradability - Closed Bottle Test	1 % - Not readily - 28 days >80 % - 5 days	- -	- -
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	OECD 302C Inherent Biodegradability: Modified MITI Test (II) OECD 301F Ready Biodegradability - Manometric Respirometry Test	5 % - 28 days 1 % - 28 days	- -	- -
Solvent naphtha (petroleum), light arom.	-	78 % - Readily - 28 days	-	Fresh water

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylene diisocyanate, oligomers n-butyl acetate 3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers Solvent naphtha (petroleum), light arom.	Fresh water 7.7 days, 23°C - - -	- - - -	Not readily Readily Not readily Readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
Hexamethylene diisocyanate, oligomers	5.54	367.7	low
n-butyl acetate	2.3	-	low
xylene	3.12	8.1 to 25.9	low
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	14.48	-	high
ethylbenzene	3.6	-	low
Solvent naphtha (petroleum), light arom.	-	10 to 2500	high

Mobility in soil




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 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. 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. 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

	New Zealand	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	Paint related material
Transport hazard class(es)	3 	3 	3 
Packing group	III	III	III
Environmental hazards	No.	No.	No.

Additional information

New Zealand : **Hazchem code** 3Y
Special provisions 163, 223

IMDG : **Emergency schedules** F-E, _S-E_
Special provisions 163, 223, 367, 955

Section 14. Transport information

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 60 L. Packaging instructions: 355. Cargo Aircraft Only: 220 L. Packaging instructions: 366. Limited Quantities - Passenger Aircraft: 10 L. Packaging instructions: Y344.
Special provisions A3, A72, A192

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

HSNO Approval Number : HSR002669
HSNO Group Standard : Surface Coatings and Colourants
HSNO Classification : FLAMMABLE LIQUIDS - Category 3
 ACUTE TOXICITY (inhalation) - Category 4
 SKIN IRRITATION - Category 2
 EYE IRRITATION - Category 2
 RESPIRATORY SENSITISATION - Category 1
 SKIN SENSITISATION - Category 1
 CARCINOGENICITY - Category 2
 REPRODUCTIVE TOXICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

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.

Inventory list

Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Eurasian Economic Union : **Russian Federation inventory:** All components are listed or exempted.
Japan : **Japan inventory (CSCL):** All components are listed or exempted.
Japan inventory (ISHL): Not determined.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.
Thailand : All components are listed or exempted.
Turkey : Not determined.
United States : Not determined.
Viet Nam : All components are listed or exempted.

Section 16. Other information

History

Date of printing	: 7/17/2023
Date of issue/Date of revision	: 7/17/2023
Date of previous issue	: 2/22/2023
Version	: 1
Key to abbreviations	: ADG = Australian Dangerous Goods ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road 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) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail SGG = Segregation Group UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

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