

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

**VOSSCHEMIE**

## Carsystem 2K Premium Hardener standard

Version	Revision Date:	Date of last issue: 15.10.2019
1.1 GB / EN	15.06.2021	Date of first issue: 15.10.2019

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

#### 1.1 Product identifier

Trade name : Carsystem 2K Premium Hardener standard  
Product code : 147.019

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

Use of the Sub-stance/Mixture : Curing chemical  
Recommended restrictions on use : Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use.

#### 1.3 Details of the supplier of the safety data sheet

Company : Vosschemie GmbH  
Esinger Steinweg 50  
25436 Uetersen  
Germany  
info@vosschemie.de  
Telephone : 04122 717 0  
Telefax : 04122 717158  
**Responsible Department** : Laboratory  
04122 717 0  
sds@vosschemie.de

#### 1.4 Emergency telephone number

Telephone : POISONS INFORMATION CENTRE  
Australia  
13 11 26

#### 1.5 Details of the supplier/importer

Company : Sydney Automotive Paints and Equipment  
Unit A3, 366 Edgar Street  
Condell Park, 2200  
reception@sape.com.au  
Telephone : 02 9772 9000  
Telefax : 02 9772 9001  
**Responsible Department** : Marketing  
02 9772 9000

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### SECTION 2: Hazards identification



#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.

#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:	 
Signal word	:	Warning
Hazard statements	:	H226 Flammable liquid and vapour. H317 May cause an allergic skin reaction. H332 Harmful if inhaled. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness.
Supplemental Hazard Statements	:	EUH066 Repeated exposure may cause skin dryness or cracking.
Precautionary statements	:	<b>Prevention:</b> P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 Avoid breathing mist or vapours. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. <b>Response:</b> P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. <b>Disposal:</b>

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P501 Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

### Hazardous components which must be listed on the label:

Hexamethylene diisocyanate, oligomers  
n-butyl acetate  
heptan-2-one  
hexamethylene-di-isocyanate

### Additional Labelling

EUH204 Contains isocyanates. May produce an allergic reaction.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Mixture  
contains  
Isocyanates

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Hexamethylene diisocyanate, oligomers	28182-81-2 500-060-2 01-2119488934-20	Acute Tox. 4; H332 Skin Sens. 1; H317 STOT SE 3; H335 (Respiratory system)  Acute toxicity estimate  Acute inhalation toxicity: 1.5 mg/l 11 mg/l	>= 50 - < 75
n-butyl acetate	123-86-4 204-658-1	Flam. Liq. 3; H226 STOT SE 3; H336	>= 10 - < 25

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	607-025-00-1 01-2119485493-29	(Central nervous system) EUH066	
heptan-2-one	110-43-0 203-767-1 606-024-00-3 01-2119902391-49	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 4; H332 STOT SE 3; H336 (Central nervous system)	$\geq 15 - \leq 25$
hexamethylene-di-isocyanate	822-06-0 212-485-8 615-011-00-1 01-2119457571-37	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 (Respiratory system)  specific concentration limit Resp. Sens. 1; H334 $\geq 0.5\%$ Skin Sens. 1; H317 $\geq 0.5\%$	$< 0.1$

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
Move out of dangerous area.  
Take off contaminated clothing and shoes immediately.  
Wash contaminated clothing before re-use.  
Do not leave the victim unattended.  
Symptoms of poisoning may appear several hours later.  
Show this safety data sheet to the doctor in attendance.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
- If inhaled : Move to fresh air.  
Keep patient warm and at rest.  
If breathing is irregular or stopped, administer artificial respiration.  
Call a physician immediately.
- In case of skin contact : Wash off immediately with soap and plenty of water.  
Call a physician if irritation develops or persists.

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In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Keep eye wide open while rinsing.  
If easy to do, remove contact lens, if worn.  
Consult a physician.

If swallowed : Rinse mouth with water.  
Do NOT induce vomiting.  
Call a physician immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

Risks : May cause an allergic skin reaction.  
Harmful if inhaled.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.

### 4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.  
Keep under medical supervision for at least 48 hours.

## SECTION 5: Firefighting measures

Hazchem: •3Y

### 5.1 Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
Dry powder  
Alcohol-resistant foam  
Water spray in large fire situations  
Water spray jet

Unsuitable extinguishing media : High volume water jet

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.  
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.  
Cool closed containers exposed to fire with water spray.

Hazardous combustion products : Hazardous decomposition products due to incomplete combustion  
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).  
Nitrogen oxides (NO<sub>x</sub>)  
Isocyanates

### 5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment. Complete suit protecting against chemicals

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Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear personal protective equipment.  
Evacuate personnel to safe areas.  
Ensure adequate ventilation, especially in confined areas.  
Avoid contact with skin, eyes and clothing.  
In the case of vapour formation use a respirator with an approved filter.

#### 6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.  
Local authorities should be advised if significant spillages cannot be contained.

#### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Sweep up and shovel into suitable containers for disposal.  
After approximately one hour, transfer to waste container and do not seal, due to evolution of carbon dioxide.  
Waste must NOT be included in a tight way.

#### 6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Avoid exposure - obtain special instructions before use.  
All processes must be supervised by specialists or authorised personnel.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Keep container closed when not in use.  
Wear personal protective equipment.  
Avoid formation of aerosol.  
Do not breathe vapours, aerosols.  
Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

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- Advice on protection against fire and explosion : Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Vapours may form explosive mixture with air.
- Hygiene measures : General industrial hygiene practice. Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. Take off all contaminated clothing immediately. Wash contaminated clothing before re-use.

### 7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.
- Further information on storage conditions : Storage must be in accordance with the BetrSichV (Germany). Keep locked up or in an area accessible only to qualified or authorised persons. Protect from moisture.
- Advice on common storage : Keep away from food and drink. Incompatible with acids and bases.

### 7.3 Specific end use(s)

- Specific use(s) : No data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Hexamethylene diisocyanate, oligomers	28182-81-2	TWA	0.02 mg/m <sup>3</sup> (NCO)	GB EH40
		STEL	0.07 mg/m <sup>3</sup> (NCO)	GB EH40
		Further information: Capable of causing occupational asthma.		
n-butyl acetate	123-86-4	TWA	150 ppm 724 mg/m <sup>3</sup>	GB EH40
		STEL	200 ppm 966 mg/m <sup>3</sup>	GB EH40
		STEL	150 ppm 723 mg/m <sup>3</sup>	2019/1831/E U
		Further information: Indicative		
		TWA	50 ppm 241 mg/m <sup>3</sup>	2019/1831/E U
		Further information: Indicative		
heptan-2-one	110-43-0	TWA	50 ppm	2000/39/EC

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			238 mg/m <sup>3</sup>	
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	100 ppm 475 mg/m <sup>3</sup>	2000/39/EC
	Further information: Identifies the possibility of significant uptake through the skin, Indicative			
		TWA	50 ppm 237 mg/m <sup>3</sup>	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL	100 ppm 475 mg/m <sup>3</sup>	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
hexamethylene-diisocyanate	822-06-0	TWA	0.02 mg/m <sup>3</sup> (NCO)	GB EH40
	Further information: Capable of causing occupational asthma.			
		STEL	0.07 mg/m <sup>3</sup> (NCO)	GB EH40
	Further information: Capable of causing occupational asthma.			

### Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Hexamethylene diisocyanate, oligomers	28182-81-2	isocyanate-derived diamine (Isocyanates): 1 µmol/mol creatinine (Urine)	At the end of the period of exposure	GB EH40 BAT
hexamethylene-diisocyanate	822-06-0	isocyanate-derived diamine (Isocyanates): 1 µmol/mol creatinine (Urine)	At the end of the period of exposure	GB EH40 BAT

### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Hexamethylene diisocyanate, oligomers	Workers	Inhalation	Long-term local effects	0.5 mg/m <sup>3</sup>
	Workers	Inhalation	Acute local effects	1 mg/m <sup>3</sup>
n-butyl acetate	Workers	Inhalation	Long-term systemic effects	300 mg/m <sup>3</sup>
	Workers	Dermal	Long-term systemic effects	11 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	35.7 mg/m <sup>3</sup>
	Consumers	Dermal	Long-term systemic effects	6 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	2 mg/kg bw/day



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heptan-2-one	Workers	Inhalation	Long-term systemic effects	394.25 mg/m3
	Workers	Dermal	Long-term systemic effects	54.27 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	84.31 mg/m3
	Consumers	Oral	Long-term systemic effects	23.32 mg/kg bw/day
	Consumers	Dermal	Long-term systemic effects	23.32 mg/kg bw/day
hexamethylene-di-isocyanate	Workers	Inhalation	Long-term local effects	0.035 mg/m3
	Workers	Inhalation	Acute local effects	0.07 mg/m3

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Hexamethylene diisocyanate, oligomers	Fresh water	0.1 mg/l
	Marine water	0.01 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	2530 mg/kg
	Marine sediment	253 mg/kg
n-butyl acetate	Soil	505 mg/kg
	Fresh water	0.18 mg/l
	Marine water	0.018 mg/l
	Fresh water sediment	0.981 mg/kg dry weight (d.w.)
	Marine sediment	0.098 mg/kg dry weight (d.w.)
heptan-2-one	Sewage treatment plant	35.6 mg/l
	Soil	0.09 mg/kg dry weight (d.w.)
	Fresh water	0.098 mg/l
	Marine water	0.01 mg/l
	Fresh water sediment	1.89 mg/kg dry weight (d.w.)
hexamethylene-di-isocyanate	Marine sediment	0.189 mg/kg dry weight (d.w.)
	Sewage treatment plant	12.5 mg/l
	Soil	0.321 mg/kg dry weight (d.w.)
	Sewage treatment plant	8.42 mg/l

## 8.2 Exposure controls

### Personal protective equipment

Eye protection : Safety glasses with side-shields conforming to EN166

Hand protection

Material : Nitrile rubber

Material : butyl-rubber

Break through time : > 480 min

Glove thickness : >= 0.7 mm

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Directive : DIN EN 374  
Protective index : Class 6

Remarks : Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.

Skin and body protection : Please wear suitable protective clothing, e.g. made of cotton or heat-resistant synthetic fibres.  
Long sleeved clothing

Respiratory protection : In order to avoid inhalation of spray-mist and sanding dust, all spraying and sanding must be done wearing adequate respirator.  
Apply technical measures to comply with the occupational exposure limits.  
Equipment should conform to EN 14387

Filter type : Combined particulates and organic vapour type (A-P)

Protective measures : Ensure that eye flushing systems and safety showers are located close to the working place.  
Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

Soil : Avoid subsoil penetration.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : colourless, light yellow

Odour : characteristic

Odour Threshold : not determined

Melting point/range : not determined

Boiling point/boiling range : 124 °C

Upper explosion limit / Upper flammability limit : Upper explosion limit  
15 %(V)

Lower explosion limit / Lower flammability limit : Lower explosion limit  
1.2 %(V)

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Flash point	: 27 °C
Ignition temperature	: not determined
pH	: Not applicable substance/mixture reacts with water
Viscosity	
Viscosity, dynamic	: not determined
Viscosity, kinematic	: not determined
Solubility(ies)	
Water solubility	: Reacts with water.
Partition coefficient: n-octanol/water	: No data available
Vapour pressure	: 10.7 hPa (20 °C)
Density	: 1.0 g/cm <sup>3</sup> (20 °C)

### 9.2 Other information

Explosives	: Not explosive In use, may form flammable/explosive vapour-air mixture.
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No decomposition if used as directed.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

Hazardous reactions	: Amines and alcohols cause exothermic reactions. Mixture reacts slowly with water resulting in evolution of CO <sub>2</sub> . Evolution of CO <sub>2</sub> in closed containers causes overpressure and produces a risk of bursting.
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### 10.4 Conditions to avoid

Conditions to avoid	: Avoid moisture.
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### 10.5 Incompatible materials

Materials to avoid	: Amines Alcohols Acids and bases Water
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### 10.6 Hazardous decomposition products

Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.  
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).  
Nitrogen oxides (NO<sub>x</sub>)  
Isocyanates

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## SECTION 11: Toxicological information

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

#### Acute toxicity

Harmful if inhaled.

#### Product:

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 1.0 - < 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

#### Components:

##### Hexamethylene diisocyanate, oligomers:

Acute oral toxicity : LD50 Oral (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 423

Acute inhalation toxicity : Acute toxicity estimate: 1.5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Expert judgement

LC50 (Rat): 0.39 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute toxicity estimate: 11 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Expert judgement

Acute dermal toxicity : LD50 Dermal (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402

##### **n-butyl acetate:**

Acute oral toxicity : LD50 (Rat): 10,760 mg/kg

Acute inhalation toxicity : LD50 (Rat): > 21 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

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Method: OECD Test Guideline 403

### heptan-2-one:

Acute inhalation toxicity : LC50 (Rat): > 16.7 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

Acute dermal toxicity : LD50 Dermal (Rat): > 2,000 mg/kg

### hexamethylene-di-isocyanate:

Acute oral toxicity : LD50 Oral (Rat): 959 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 0.124 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 Dermal (Rat): > 7,000 mg/kg  
Method: OECD Test Guideline 402

### Skin corrosion/irritation

Not classified based on available information.

### Components:

#### Hexamethylene diisocyanate, oligomers:

Species : Rabbit  
Assessment : No skin irritation  
Method : OECD Test Guideline 404

#### hexamethylene-di-isocyanate:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation

### Serious eye damage/eye irritation

Not classified based on available information.

### Components:

#### Hexamethylene diisocyanate, oligomers:

Species : Rabbit  
Assessment : No eye irritation  
Method : OECD Test Guideline 405

#### hexamethylene-di-isocyanate:

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : Moderate eye irritation

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### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

#### Respiratory sensitisation

Not classified based on available information.

#### Components:

##### Hexamethylene diisocyanate, oligomers:

Test Type : Local lymph node assay (LLNA)  
Exposure routes : Skin contact  
Species : Mouse  
Assessment : May cause sensitisation by skin contact.  
Method : OECD Test Guideline 429  
Result : positive

##### hexamethylene-di-isocyanate:

Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : The product is a skin sensitiser, sub-category 1B.

Species : Guinea pig  
Result : The product is a respiratory sensitiser, sub-category 1B.

### Germ cell mutagenicity

Not classified based on available information.

#### Components:

##### Hexamethylene diisocyanate, oligomers:

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: Not mutagenic in Ames Test

### Carcinogenicity

Not classified based on available information.

### Reproductive toxicity

Not classified based on available information.

### STOT - single exposure

May cause respiratory irritation.

May cause drowsiness or dizziness.

#### Components:

##### Hexamethylene diisocyanate, oligomers:

Exposure routes : Inhalation  
Assessment : May cause respiratory irritation.

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### heptan-2-one:

Assessment : May cause drowsiness or dizziness.

### hexamethylene-di-isocyanate:

Assessment : May cause respiratory irritation.

### STOT - repeated exposure

Not classified based on available information.

### Repeated dose toxicity

#### Components:

#### Hexamethylene diisocyanate, oligomers:

Species : Rat, male and female  
NOAEL : 0.0033 mg/l  
Application Route : Inhalation  
Test atmosphere : dust/mist  
Exposure time : 90d  
Number of exposures : 6h / d  
Dose : 0 - 0,0005 - 0,003 - 0,0264  
Method : OECD Test Guideline 413

### Aspiration toxicity

Not classified based on available information.

## 11.2 Information on other hazards

### Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### Further information

#### Product:

Remarks : Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

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### SECTION 12: Ecological information

#### 12.1 Toxicity

##### Components:

##### **Hexamethylene diisocyanate, oligomers:**

- Toxicity to fish : LC0 (Danio rerio (zebra fish)): >= 100 mg/l  
End point: mortality  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC0 (Daphnia magna (Water flea)): >= 100 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): 50 mg/l  
End point: Growth rate  
Exposure time: 72 h  
Method: OECD Test Guideline 201

##### **heptan-2-one:**

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 131 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

##### **hexamethylene-di-isocyanate:**

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): >= 82.8 mg/l  
End point: mortality  
Exposure time: 96 h  
Method: Regulation (EC) No. 440/2008, Annex, C.1
- Toxicity to daphnia and other aquatic invertebrates : EC0 (Daphnia magna (Water flea)): >= 89.1 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Method: Regulation (EC) No. 440/2008, Annex, C.2
- Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 77.4 mg/l  
Exposure time: 72 h
- Toxicity to microorganisms : EC50 (Bacteria): 842 mg/l  
Exposure time: 3 h

##### **Ecotoxicology Assessment**

- Chronic aquatic toxicity : This product has no known ecotoxicological effects.



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### 12.2 Persistence and degradability

#### Components:

##### **Hexamethylene diisocyanate, oligomers:**

Biodegradability : Result: Not rapidly biodegradable  
Biodegradation: 2 %  
Exposure time: 28 d  
Method: Regulation (EC) No. 440/2008, Annex, C.4-E

##### **heptan-2-one:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 100 %  
Method: OECD Test Guideline 310

##### **hexamethylene-di-isocyanate:**

Biodegradability : Biodegradation: 42 %  
Exposure time: 28 d

### 12.3 Bioaccumulative potential

#### Components:

##### **Hexamethylene diisocyanate, oligomers:**

Bioaccumulation : Bioconcentration factor (BCF): 706

Partition coefficient: n-octanol/water : log Pow: 8.38

##### **heptan-2-one:**

Partition coefficient: n-octanol/water : log Pow: 2.26 (30 °C)

##### **hexamethylene-di-isocyanate:**

Bioaccumulation : Bioconcentration factor (BCF): 59.6

Partition coefficient: n-octanol/water : log Pow: 3.2 (20 °C)

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

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### 12.6 Endocrine disrupting properties

**Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

**Product:**

Additional ecological information : No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Do not dispose of with domestic refuse.  
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.  
Dispose of in accordance with local regulations.  
Dispose of wastes in an approved waste disposal facility.  
Send to a licensed waste management company.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Store containers and offer for recycling of material when in accordance with the local regulations.  
Packaging that is not properly emptied must be disposed of as the unused product.  
Dispose of in accordance with local regulations.

Waste Code : The following Waste Codes are only suggestions:  
08 05 01, waste isocyanates  
  
08 01 11, waste paint and varnish containing organic solvents or other hazardous substances

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## SECTION 14: Transport information

### 14.1 UN number or ID number

ADN	: UN 1263
ADR	: UN 1263
RID	: UN 1263
IMDG	: UN 1263
IATA	: UN 1263

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### 14.2 UN proper shipping name

<b>ADN</b>	:	PAINT RELATED MATERIAL
<b>ADR</b>	:	PAINT RELATED MATERIAL
<b>RID</b>	:	PAINT RELATED MATERIAL
<b>IMDG</b>	:	PAINT RELATED MATERIAL
<b>IATA</b>	:	Paint related material

### 14.3 Transport hazard class(es)

<b>ADN</b>	:	3
<b>ADR</b>	:	3
<b>RID</b>	:	3
<b>IMDG</b>	:	3
<b>IATA</b>	:	3

### 14.4 Packing group

<b>ADN</b>	
Packing group	: III
Classification Code	: F1
Hazard Identification Number	: 30
Labels	: 3
<b>ADR</b>	
Packing group	: III
Classification Code	: F1
Hazard Identification Number	: 30
Labels	: 3
Tunnel restriction code	: (D/E)
<b>RID</b>	
Packing group	: III
Classification Code	: F1
Hazard Identification Number	: 30
Labels	: 3
<b>IMDG</b>	
Packing group	: III
Labels	: 3
EmS Code	: F-E, <u>S-E</u>
<b>IATA (Cargo)</b>	
Packing instruction (cargo aircraft)	: 366
Packing instruction (LQ)	: Y344
Packing group	: III
Labels	: Class 3 - Flammable liquids
<b>IATA (Passenger)</b>	
Packing instruction (passenger aircraft)	: 355
Packing instruction (LQ)	: Y344
Packing group	: III

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Labels : Class 3 - Flammable liquids

### 14.5 Environmental hazards

#### ADN

Environmentally hazardous : no

#### ADR

Environmentally hazardous : no

#### RID

Environmentally hazardous : no

#### IMDG

Marine pollutant : no

**Hazchem: •3Y**

### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: Number on list 3

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. P5c FLAMMABLE LIQUIDS

#### Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

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### 15.2 Chemical safety assessment

A chemical safety assessment according to (EC) regulation 1907/2006 (REACH) has not been carried out for this product.

### SECTION 16: Other information

#### Full text of H-Statements

H226	: Flammable liquid and vapour.
H302	: Harmful if swallowed.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H319	: Causes serious eye irritation.
H330	: Fatal if inhaled.
H332	: Harmful if inhaled.
H334	: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	: May cause respiratory irritation.
H336	: May cause drowsiness or dizziness.
EUH066	: Repeated exposure may cause skin dryness or cracking.

#### Full text of other abbreviations

Acute Tox.	: Acute toxicity
Eye Irrit.	: Eye irritation
Flam. Liq.	: Flammable liquids
Resp. Sens.	: Respiratory sensitisation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure
2000/39/EC	: Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
2019/1831/EU	: Europe. Commission Directive 2019/1831/EU establishing a fifth list of indicative occupational exposure limit values
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 BAT	: UK. Biological monitoring guidance values
2000/39/EC / TWA	: Limit Value - eight hours
2000/39/EC / STEL	: Short term exposure limit
2019/1831/EU / TWA	: Limit Value - eight hours
2019/1831/EU / STEL	: Short term exposure limit
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of

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Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

### Further information

Training advice : Provide adequate information, instruction and training for operators.

### Classification of the mixture:

Flam. Liq. 3	H226
Acute Tox. 4	H332
Skin Sens. 1	H317
STOT SE 3	H336
STOT SE 3	H335

### Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Calculation method
Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.