

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by  
Commission Regulation (EU) 2020/878



## 2C HARDENER FOR TOP COAT - 5 L

Version	Revision Date:	SDS Number:	Date of last issue: 10.11.2022
13.0	06.06.2023	10786287-00012	Date of first issue: 11.06.2010

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

#### 1.1 Product identifier

Trade name : 2C HARDENER FOR TOP COAT - 5 L

Product code : 5866400105

Unique Formula Identifier (UFI) : 5U68-D0CA-800T-4PYR

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

Use of the Sub-stance/Mixture : Hardener  
Professional use product

Recommended restrictions on use : Not applicable

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

Company : Adolf Wuerth GmbH & Co. KG  
Reinhold-Würth-Str. 12-17  
74653 Künzelsau

Telephone : +49 794015 0

Telefax : +49 794015 10 00

E-mail address of person responsible for the SDS : isi@wuerth.com

#### 1.4 Emergency telephone number

+49 (0)6132 – 84463

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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	H336: May cause drowsiness or dizziness.

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Specific target organ toxicity - single exposure, Category 3      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 : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 Avoid breathing spray.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

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

Hexamethylene diisocyanate oligomers, iminooxadiazindione  
n-Butyl acetate  
2-Butoxyethyl acetate  
Hexamethylene diisocyanate

### 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.

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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.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).  
Vapours may form explosive mixture with air.

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Chemical nature : Paint related material

##### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Hexamethylene diisocyanate oligomers, iminooxadiazindione	28182-81-2  01-2119488934-20	Acute Tox. 4; H332 Skin Sens. 1; H317 STOT SE 3; H335  Acute toxicity estimate  Acute inhalation toxicity (dust/mist): 1,5 mg/l	>= 50 - < 70
n-Butyl acetate	123-86-4 204-658-1 607-025-00-1 01-2119485493-29	Flam. Liq. 3; H226 STOT SE 3; H336 EUH066	>= 20 - < 30
2-Methoxy-1-methylethyl acetate	108-65-6 203-603-9 607-195-00-7 01-2119475791-29	Flam. Liq. 3; H226 STOT SE 3; H336	>= 10 - < 20
2-Butoxyethyl acetate	112-07-2 203-933-3 607-038-00-2 01-2119475112-47	Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312  Acute toxicity estimate  Acute oral toxicity: 1.880 mg/kg Acute inhalation toxicity (vapour): 20 mg/l Acute dermal toxicity: 1.500 mg/kg	>= 1 - < 10
Hexamethylene diisocyanate	822-06-0 212-485-8	Acute Tox. 4; H302 Acute Tox. 1; H330	< 0,1

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	615-011-00-1	Skin Corr. 1C; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335
		specific concentration limit Resp. Sens. 1; H334 >= 0,5 % Skin Sens. 1; H317 >= 0,5 %
		Acute toxicity esti- mate
		Acute oral toxicity: 959 mg/kg Acute inhalation tox- icity (vapour): 0,124 mg/l

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.  
When symptoms persist or in all cases of doubt seek medical advice.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- If inhaled : If inhaled, remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Get medical attention if symptoms occur.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water.  
Remove contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : Flush eyes with water as a precaution.  
Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.

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Get medical attention if symptoms occur.  
Rinse mouth thoroughly with water.

### 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.  
Repeated exposure may cause skin dryness or cracking.

Respiratory symptoms, including pulmonary edema, may be delayed.  
Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

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

Treatment : Treat symptomatically and supportively.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

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

Unsuitable extinguishing media : High volume water jet

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

Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.  
Flash back possible over considerable distance.  
Vapours may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.  
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.

Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for firefighters

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

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

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### SECTION 6: Accidental release measures

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

Personal precautions : Remove all sources of ignition.  
Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

#### 6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
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 : Non-sparking tools should be used.  
Soak up with inert absorbent material.  
Suppress (knock down) gases/vapours/mists with a water spray jet.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
After approximately one hour, transfer to waste container and do not seal, due to evolution of carbon dioxide.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

#### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

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### CONTROLS/PERSONAL PROTECTION section.

- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.  
Use explosion-proof electrical, ventilating and lighting equipment.
- Advice on safe handling : Do not get on skin or clothing.  
Avoid breathing spray.  
Do not swallow.  
Avoid contact with eyes.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Non-sparking tools should be used.  
Keep container tightly closed.  
Protect from moisture.  
Already sensitised individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitisers.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Take precautionary measures against static discharges.  
Take care to prevent spills, waste and minimize release to the environment.
- Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace.  
Wash contaminated clothing before re-use.

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

- Requirements for storage areas and containers : Keep in properly labelled containers. Store locked up. Protect from moisture. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.

- Advice on common storage : Do not store with the following product types:  
Strong oxidizing agents  
Self-reactive substances and mixtures  
Organic peroxides  
Flammable solids  
Pyrophoric liquids  
Pyrophoric solids  
Self-heating substances and mixtures  
Substances and mixtures, which in contact with water, emit flammable gases  
Explosives  
Gases  
Very acutely toxic substances and mixtures

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II  
Storage class (TRGS 510) : 3

### 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
n-Butyl acetate	123-86-4	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		
		AGW	62 ppm 300 mg/m <sup>3</sup>	DE TRGS 900
		Peak-limit: excursion factor (category): 2;(I)		
		Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child		
2-Methoxy-1-methylethyl acetate	108-65-6	STEL	100 ppm 550 mg/m <sup>3</sup>	2000/39/EC
		Further information: Identifies the possibility of significant uptake through the skin, Indicative		
		TWA	50 ppm 275 mg/m <sup>3</sup>	2000/39/EC
		Further information: Identifies the possibility of significant uptake through the skin, Indicative		
		AGW	50 ppm 270 mg/m <sup>3</sup>	DE TRGS 900
		Peak-limit: excursion factor (category): 1;(I)		
		Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child		
2-Butoxyethyl acetate	112-07-2	STEL	50 ppm 333 mg/m <sup>3</sup>	2000/39/EC
		Further information: Identifies the possibility of significant uptake through the skin, Indicative		
		TWA	20 ppm 133 mg/m <sup>3</sup>	2000/39/EC
		Further information: Identifies the possibility of significant uptake through the skin, Indicative		
		AGW (Vapour and aerosols)	10 ppm 65 mg/m <sup>3</sup>	DE TRGS 900
		Peak-limit: excursion factor (category): 2;(I)		



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	Further information: Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
Hexamethylene diisocyanate	822-06-0	AGW	0,005 ppm 0,035 mg/m <sup>3</sup>	TRGS 430
	Peak-limit: excursion factor (category): 1;=2=(I)			
	Further information: In well-founded cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., airway sensitizing substance			
		AGW (Vapour and aerosols)	0,005 ppm 0,035 mg/m <sup>3</sup>	DE TRGS 900
	Peak-limit: excursion factor (category): 1;=2=(I)			
	Further information: In well-found cases also a momentary value can be established, that never can be exceeded. This substance will be indicated by = = in combination with an exceeding value., Substance sensitizing through the respiratory system			

### Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
2-Butoxyethyl acetate	112-07-2	butoxy acetic acid: 150 mg/g Creatinine (Urine)	In case of long-term exposure: after more than one shift, Immediately after exposure or after working hours	TRGS 903
Hexamethylene diisocyanate	822-06-0	hexamethyldiamine: 15 µg/g creatinine (Urine)	Immediately after exposure or after working hours	TRGS 903

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

Substance name	End Use	Exposure routes	Potential health effects	Value	
n-Butyl acetate	Workers	Inhalation	Acute systemic effects	600 mg/m <sup>3</sup>	
		Inhalation	Acute local effects	600 mg/m <sup>3</sup>	
		Inhalation	Long-term systemic effects	300 mg/m <sup>3</sup>	
	Workers	Inhalation	Long-term local effects	300 mg/m <sup>3</sup>	
		Consumers	Inhalation	Acute systemic effects	300 mg/m <sup>3</sup>
			Inhalation	Acute local effects	300 mg/m <sup>3</sup>
	Inhalation		Long-term systemic effects	35,7 mg/m <sup>3</sup>	
	Consumers	Inhalation	Long-term local effects	35,7 mg/m <sup>3</sup>	
		Consumers	Skin contact	Long-term systemic effects	11 mg/kg bw/day
Skin contact	Acute systemic effects		11 mg/kg bw/day		

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	Consumers	Skin contact	Long-term systemic effects	6 mg/kg bw/day
	Consumers	Skin contact	Acute systemic effects	6 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	2 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	2 mg/kg bw/day
2-Methoxy-1-methylethyl acetate	Workers	Inhalation	Long-term systemic effects	275 mg/m3
	Workers	Skin contact	Long-term systemic effects	796 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	33 mg/m3
	Consumers	Skin contact	Long-term systemic effects	320 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	36 mg/kg bw/day
	Workers	Inhalation	Acute local effects	550 mg/m3
	Consumers	Inhalation	Long-term local effects	33 mg/m3
2-Butoxyethyl acetate	Workers	Inhalation	Long-term systemic effects	133 mg/m3
	Workers	Inhalation	Acute systemic effects	775 mg/m3
	Workers	Inhalation	Acute local effects	333 mg/m3
	Workers	Skin contact	Long-term systemic effects	102 mg/kg bw/day
	Workers	Skin contact	Acute systemic effects	102 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	67 mg/m3
	Consumers	Inhalation	Acute systemic effects	499 mg/m3
	Consumers	Inhalation	Acute local effects	166 mg/m3
	Consumers	Skin contact	Long-term systemic effects	36 mg/kg bw/day
	Consumers	Skin contact	Acute systemic effects	27 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	4,3 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	18 mg/kg bw/day
Hexamethylene diisocyanate	Workers	Inhalation	Long-term systemic effects	0,035 mg/m3
	Workers	Inhalation	Acute systemic effects	0,07 mg/m3
	Workers	Inhalation	Long-term local effects	0,035 mg/m3
	Workers	Inhalation	Acute local effects	0,07 mg/m3
Hexamethylene diisocyanate oligomers,	Workers	Inhalation	Long-term local effects	0,5 mg/m3

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iminooxadiazindione				
	Workers	Inhalation	Acute local effects	1 mg/m3

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

Substance name	Environmental Compartment	Value
n-Butyl acetate	Fresh water	0,18 mg/l
	Marine water	0,018 mg/l
	Sewage treatment plant	35,6 mg/l
	Fresh water sediment	0,981 mg/kg dry weight (d.w.)
	Marine sediment	0,098 mg/kg dry weight (d.w.)
2-Methoxy-1-methylethyl acetate	Fresh water	0,635 mg/l
	Marine water	0,0635 mg/l
	Intermittent use/release	6,35 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	3,29 mg/kg dry weight (d.w.)
2-Butoxyethyl acetate	Marine sediment	0,329 mg/kg dry weight (d.w.)
	Soil	0,29 mg/kg dry weight (d.w.)
	Fresh water	0,304 mg/l
	Marine water	0,0304 mg/l
	Intermittent use/release	0,56 mg/l
Hexamethylene diisocyanate	Sewage treatment plant	90 mg/l
	Fresh water sediment	2,03 mg/kg
	Marine sediment	0,203 mg/kg
	Soil	0,68 mg/kg
	Oral (Secondary Poisoning)	60 mg/kg food
Hexamethylene diisocyanate oligomers, iminooxadiazindione	Fresh water	0,0774 mg/l
	Marine water	0,00774 mg/l
	Intermittent use/release	0,774 mg/l
	Sewage treatment plant	8,42 mg/l
	Fresh water sediment	0,01334 mg/kg
Hexamethylene diisocyanate oligomers, iminooxadiazindione	Marine sediment	0,001344 mg/kg
	Soil	0,0026 mg/kg
	Fresh water	0,199 mg/l
	Marine water	0,02 mg/l
	Intermittent use/release	1,99 mg/l
Hexamethylene diisocyanate oligomers, iminooxadiazindione	Sewage treatment plant	100 mg/l
	Fresh water sediment	44551 mg/kg
	Marine sediment	4455 mg/kg
	Soil	8884 mg/kg

### 8.2 Exposure controls

#### Engineering measures

Minimize workplace exposure concentrations.

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If sufficient ventilation is unavailable, use with local exhaust ventilation.  
Use explosion-proof electrical, ventilating and lighting equipment.

### Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:  
Safety glasses  
Equipment should conform to DIN EN 166

Hand protection  
Material : butyl-rubber  
Break through time : 60 min  
Glove thickness :  $\geq 0,7$  mm

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Wear the following personal protective equipment:  
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.  
Equipment should conform to DIN EN 14387

Filter type : Organic vapour type (A)

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : liquid

|| Colour : colourless

Odour : characteristic

Odour Threshold : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling : 124 - 128 °C

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range

Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Ignitable (see flash point)
Upper explosion limit / Upper flammability limit	:	10,8 %(V)
Lower explosion limit / Lower flammability limit	:	1,2 %(V)
Flash point	:	27 °C Method: DIN 53213
Auto-ignition temperature	:	280 °C Method: DIN 51794
Decomposition temperature	:	No data available
pH	:	Solvent mixture; pH value determination not possible, no aqueous solution
Viscosity		
Viscosity, kinematic	:	10 - 15 mm <sup>2</sup> /s (20 °C)
Flow time	:	13 s at 20 °C Cross section: 4 mm Method: DIN 53211
Solubility(ies)		
Water solubility	:	partly miscible
Partition coefficient: n-octanol/water	:	Not applicable
Vapour pressure	:	10,7 hPa (20 °C)
Density	:	1,036 g/cm <sup>3</sup> (20 °C) Method: DIN 53217
Relative vapour density	:	No data available
Particle characteristics		
Particle size	:	Not applicable

### 9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

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Evaporation rate : No data available

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### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

Not classified as a reactivity hazard.

#### 10.2 Chemical stability

Stable if used as directed. Follow precautionary advice and avoid incompatible materials and conditions.

Polymerises at high temperatures with evolution of carbon dioxide.

#### 10.3 Possibility of hazardous reactions

Hazardous reactions : Flammable liquid and vapour.  
Vapours may form explosive mixture with air.  
Isocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the isocyanate.  
Exothermic reaction with acids, amines and alcohols  
Reacts with water to form carbon dioxide and heat  
Isocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea.

#### 10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

#### 10.5 Incompatible materials

Materials to avoid : Oxidizing agents  
Acids  
Bases  
Water  
Alcohols  
Amines  
Ammonia  
Aluminium  
Zinc  
Brass  
Tin  
Copper  
Galvanised metals  
Humid air

#### 10.6 Hazardous decomposition products

No hazardous decomposition products are known.

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### SECTION 11: Toxicological information

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

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Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

### Acute toxicity

Harmful if inhaled.

#### Product:

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

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

Acute dermal toxicity : Acute toxicity estimate: > 2.000 mg/kg  
Method: Calculation method

#### Components:

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

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg  
Method: OECD Test Guideline 423  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : Acute toxicity estimate (Rat): 1,5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Expert judgement

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

##### **n-Butyl acetate:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 21,1 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

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### 2-Methoxy-1-methylethyl acetate:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg  
Acute inhalation toxicity : LC0 (Rat): 9,48 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg

### 2-Butoxyethyl acetate:

Acute oral toxicity : LD50 (Rat): 1.880 mg/kg  
Acute inhalation toxicity : Acute toxicity estimate: 20 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Expert judgement  
Remarks: Based on national or regional regulation.  
Acute dermal toxicity : LD50 (Rabbit): 1.500 mg/kg

### Hexamethylene diisocyanate:

Acute oral toxicity : LD50 (Rat): 959 mg/kg  
Acute inhalation toxicity : LC50 (Rat): 124 mg/m<sup>3</sup>  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403  
Acute dermal toxicity : LD50 (Rat): > 7.000 mg/kg  
Method: OECD Test Guideline 402

### Skin corrosion/irritation

Repeated exposure may cause skin dryness or cracking.

### Components:

#### Hexamethylene diisocyanate oligomers, iminooxadiazindione:

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

#### n-Butyl acetate:

Species : Rabbit  
Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

### 2-Methoxy-1-methylethyl acetate:



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Species : Rabbit  
Result : No skin irritation

### 2-Butoxyethyl acetate:

Species : Rabbit  
Result : No skin irritation

### Hexamethylene diisocyanate:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Corrosive after 1 to 4 hours of exposure

### Serious eye damage/eye irritation

Not classified based on available information.

### Components:

#### Hexamethylene diisocyanate oligomers, iminooxadiazindione:

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

#### n-Butyl acetate:

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

#### 2-Methoxy-1-methylethyl acetate:

Species : Rabbit  
Result : No eye irritation

#### 2-Butoxyethyl acetate:

Species : Rabbit  
Result : No eye irritation

#### Hexamethylene diisocyanate:

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : Irreversible effects on the eye

### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

#### Respiratory sensitisation

Not classified based on available information.

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### Components:

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

Test Type : Local lymph node assay (LLNA)  
Exposure routes : Skin contact  
Species : Mouse  
Method : OECD Test Guideline 429  
Result : positive

Assessment : Probability or evidence of skin sensitisation in humans

Exposure routes : Inhalation  
Species : Guinea pig  
Result : negative  
Remarks : Based on data from similar materials

#### **n-Butyl acetate:**

Test Type : Maximisation Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Result : negative

#### **2-Methoxy-1-methylethyl acetate:**

Test Type : Maximisation Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : negative

#### **2-Butoxyethyl acetate:**

Test Type : Buehler Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Result : negative

#### **Hexamethylene diisocyanate:**

Test Type : Maximisation Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Result : positive

Assessment : Probability or evidence of skin sensitisation in humans

Exposure routes : inhalation (vapour)  
Species : Guinea pig  
Result : positive

Assessment : Probability of respiratory sensitisation in humans based on animal testing

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### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Hexamethylene diisocyanate oligomers, iminooxadiazindione:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: Based on data from similar materials

#### n-Butyl acetate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

#### 2-Methoxy-1-methylethyl acetate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

#### 2-Butoxyethyl acetate:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative  
Remarks: Based on data from similar materials

#### Hexamethylene diisocyanate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

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Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: inhalation (vapour)  
Result: negative

### **Carcinogenicity**

Not classified based on available information.

### **Components:**

#### **2-Methoxy-1-methylethyl acetate:**

Species : Rat  
Application Route : inhalation (vapour)  
Exposure time : 2 Years  
Result : negative  
Remarks : Based on data from similar materials

#### **2-Butoxyethyl acetate:**

Species : Rat  
Application Route : inhalation (vapour)  
Exposure time : 2 Years  
Result : negative  
Remarks : Based on data from similar materials

#### **Hexamethylene diisocyanate:**

Species : Rat  
Application Route : inhalation (vapour)  
Exposure time : 2 Years  
Method : OECD Test Guideline 453  
Result : negative

### **Reproductive toxicity**

Not classified based on available information.

### **Components:**

#### **n-Butyl acetate:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 416  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: inhalation (vapour)  
Result: negative

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### **2-Methoxy-1-methylethyl acetate:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 416  
Result: negative  
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: inhalation (vapour)  
Result: negative

### **2-Butoxyethyl acetate:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Mouse  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

### **Hexamethylene diisocyanate:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the  
reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 422  
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: inhalation (vapour)  
Method: OECD Test Guideline 414  
Result: negative

### **STOT - single exposure**

May cause respiratory irritation.  
May cause drowsiness or dizziness.

### **Components:**

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

Assessment : May cause respiratory irritation.

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### **n-Butyl acetate:**

Assessment : May cause drowsiness or dizziness.

### **2-Methoxy-1-methylethyl acetate:**

Assessment : May cause drowsiness or dizziness.

### **Hexamethylene diisocyanate:**

Assessment : May cause respiratory irritation.

### **STOT - repeated exposure**

Not classified based on available information.

### **Components:**

#### **Hexamethylene diisocyanate:**

Exposure routes : inhalation (vapour)  
Assessment : No significant health effects observed in animals at concentrations of 1 mg/l/6h/d or less.

### **Repeated dose toxicity**

#### **Components:**

##### **n-Butyl acetate:**

Species : Rat  
NOAEL : 2,4 mg/l  
Application Route : inhalation (vapour)  
Exposure time : 90 Days

##### **2-Methoxy-1-methylethyl acetate:**

Species : Rat  
NOAEL : > 1.000 mg/kg  
Application Route : Ingestion  
Exposure time : 41 - 45 Days  
Method : OECD Test Guideline 422

Species : Mouse  
NOAEL : 1,62 mg/l  
Application Route : inhalation (vapour)  
Exposure time : 2 yr  
Remarks : Based on data from similar materials

Species : Rabbit  
NOAEL : > 1.838 mg/kg  
Application Route : Skin contact  
Exposure time : 90 Days  
Remarks : Based on data from similar materials

##### **2-Butoxyethyl acetate:**

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Species : Rat, male  
NOAEL : < 69 mg/kg  
Application Route : Ingestion  
Exposure time : 90 Days

### Hexamethylene diisocyanate:

Species : Rat  
NOAEL : 0,000034 mg/l  
Application Route : inhalation (vapour)  
Exposure time : 2 yr

### 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.

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

#### Hexamethylene diisocyanate oligomers, iminooxadiazindione:

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 100 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: Directive 67/548/EEC, Annex V, C.3.

NOEC (Desmodesmus subspicatus (green algae)): > 1 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: Directive 67/548/EEC, Annex V, C.3.

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Toxicity to microorganisms : EC50 : > 10.000 mg/l  
Exposure time: 3 h  
Method: 88/302/EC

### **n-Butyl acetate:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 18 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia sp. (water flea)): 44 mg/l  
aquatic invertebrates      Exposure time: 48 h

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): 397  
plants      mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

NOEC (Pseudokirchneriella subcapitata (green algae)): 196  
mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to microorganisms : IC50 (Tetrahymena pyriformis): 356 mg/l  
Exposure time: 40 h

Toxicity to daphnia and other : NOEC: 23,2 mg/l  
aquatic invertebrates (Chronic toxicity)      Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

### **2-Methoxy-1-methylethyl acetate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 - 180  
mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 500 mg/l  
aquatic invertebrates      Exposure time: 48 h

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): >  
plants      1.000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (algae)): > 1.000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC10 : > 1.000 mg/l



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Exposure time: 0,5 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC:  $\geq$  100 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211

### 2-Butoxyethyl acetate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 28 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 37 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 1.570 mg/l  
Exposure time: 72 h  
Method: ISO 8692

Toxicity to microorganisms : IC50 : 2.800 mg/l  
Exposure time: 16 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 30,4 mg/l  
Exposure time: 7 d  
Species: Ceriodaphnia dubia (water flea)

### Hexamethylene diisocyanate:

Toxicity to fish : LC0 (Danio rerio (zebra fish)): 82,8 mg/l  
Exposure time: 96 h  
Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other aquatic invertebrates : EC0 (Daphnia magna (Water flea)): 89,1 mg/l  
Exposure time: 48 h  
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)):  $>$  77,4 mg/l  
Exposure time: 72 h  
Method: Directive 67/548/EEC, Annex V, C.3.

NOEC (Desmodesmus subspicatus (green algae)): 11,7 mg/l  
Exposure time: 72 h  
Method: Directive 67/548/EEC, Annex V, C.3.

Toxicity to microorganisms : EC50 : 842 mg/l  
Exposure time: 3 h

## 12.2 Persistence and degradability

### Components:

**Hexamethylene diisocyanate oligomers, iminooxadiazindione:**

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Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 2 %  
Exposure time: 28 d

### **n-Butyl acetate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 83 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D

### **2-Methoxy-1-methylethyl acetate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 90 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

### **2-Butoxyethyl acetate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 88 %  
Exposure time: 28 d

### **Hexamethylene diisocyanate:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 42 %  
Exposure time: 28 d  
Method: Regulation (EC) No. 440/2008, Annex, C.4-D

## 12.3 Bioaccumulative potential

### **Components:**

#### **n-Butyl acetate:**

Partition coefficient: n-  
octanol/water : log Pow: 2,3

#### **2-Methoxy-1-methylethyl acetate:**

Partition coefficient: n-  
octanol/water : log Pow: 1,2

#### **2-Butoxyethyl acetate:**

Partition coefficient: n-  
octanol/water : log Pow: 1,51

#### **Hexamethylene diisocyanate:**

Partition coefficient: n-  
octanol/water : log Pow: 0,02  
Remarks: Based on data from similar materials

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### 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.

### 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

No data available

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

- |                        |  |
|------------------------|--|
| Product                | : Dispose of in accordance with local regulations.<br>According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.<br>Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.<br>Do not dispose of waste into sewer.   |
| Contaminated packaging | : Empty containers should be taken to an approved waste handling site for recycling or disposal.<br>Empty containers retain residue and can be dangerous.<br>Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.<br>If not otherwise specified: Dispose of as unused product. |
| Waste Code             | : The following Waste Codes are only suggestions:<br><br>used product<br>08 01 11, waste paint and varnish containing organic solvents or other hazardous substances<br><br>unused product<br>08 01 11, waste paint and varnish containing organic solvents or other hazardous substances  |

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uncleaned packagings  
15 01 10, packaging containing residues of or contaminated  
by hazardous substances

Acc. Packaging Act properly emptied packaging:  
Properly emptied, non-contaminated packaging of non-  
hazardous products can be supplied to a system for the col-  
lection of sales packaging.

---

### 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

#### 14.2 UN proper shipping name

**ADN** : PAINT RELATED MATERIAL  
**ADR** : PAINT RELATED MATERIAL  
**RID** : PAINT RELATED MATERIAL  
**IMDG** : PAINT RELATED MATERIAL  
**IATA** : Paint related material

#### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
<b>ADN</b>	: 3	
<b>ADR</b>	: 3	
<b>RID</b>	: 3	
<b>IMDG</b>	: 3	
<b>IATA</b>	: 3	

#### 14.4 Packing group

**ADN**  
Packing group : III  
Classification Code : F1  
Hazard Identification Number : 30  
Labels : 3

**ADR**  
Packing group : III  
Classification Code : F1  
Hazard Identification Number : 30

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Labels : 3  
Tunnel restriction code : (D/E)

### RID

Packing group : III  
Classification Code : F1  
Hazard Identification Number : 30  
Labels : 3

### IMDG

Packing group : III  
Labels : 3  
EmS Code : F-E, S-E

### IATA (Cargo)

Packing instruction (cargo aircraft) : 366  
Packing instruction (LQ) : Y344  
Packing group : III  
Labels : Flammable Liquids

### IATA (Passenger)

Packing instruction (passenger aircraft) : 355  
Packing instruction (LQ) : Y344  
Packing group : III  
Labels : Flammable Liquids

## 14.5 Environmental hazards

### ADN

Environmentally hazardous : no

### ADR

Environmentally hazardous : no

### RID

Environmentally hazardous : no

### IMDG

Marine pollutant : no

## 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

Remarks : Not applicable for product as supplied.

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## 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 : Conditions of restriction for the fol-

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according to Regulation (EC) No. 1907/2006, as amended by  
Commission Regulation (EU) 2020/878



## 2C HARDENER FOR TOP COAT - 5 L

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the market and use of certain dangerous substances, mixtures and articles (Annex XVII)      lowing entries should be considered: Number on list 75, 3

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)      If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).      : 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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals      : Not applicable

REACH - List of substances subject to authorisation (Annex XIV)      : 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	Quantity 1 5.000 t	Quantity 2 50.000 t
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Water hazard class (Germany)      : WGK 1 slightly hazardous to water  
Classification according to AwSV, Annex 1 (5.2)

Volatile organic compounds      : Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control)  
Volatile organic compounds (VOC) content: 46,15 %

### Other regulations:

TRGS 430 (German regulatory requirements)

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

Other information      : Items where changes have been made to the previous version

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are highlighted in the body of this document by two vertical lines.

### Full text of H-Statements

H226	:	Flammable liquid and vapour.
H302	:	Harmful if swallowed.
H312	:	Harmful in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
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 Dam.	:	Serious eye damage
Flam. Liq.	:	Flammable liquids
Resp. Sens.	:	Respiratory sensitisation
Skin Corr.	:	Skin corrosion
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
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
TRGS 430	:	Germany. TRGS 430 - Isocyanates
TRGS 903	:	TRGS 903 - Biological limit 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
DE TRGS 900 / AGW	:	Time Weighted Average
TRGS 430 / AGW	:	Occupational Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - 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 Ships car-

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rying 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; TECI - Thailand Existing Chemicals 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

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

### 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

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

DE / EN