Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 07.10.2024 Version number 5 (replaces version 4) Revision: 07.10.2024

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

· **1.1 Product identifier**

· Trade name: **Hardener for Mammut 200**

· Article number: 70531, 70532

· UFI: GUR7-V0UK-F00G-9713

· **1.2 Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.

· Application of the substance / the mixture Coating
Hardening agent/ Curing agent

· **1.3 Details of the supplier of the safety data sheet**

· Manufacturer/Supplier: AKEMI chemisch technische Spezialfabrik GmbH
Lechstrasse 28
D 90451 Nürnberg
Tel. +49(0)911-642960
Fax. +49(0)911-644456
e-mail info@akemi.de

· Further information obtainable from: Laboratory

· **1.4 Emergency telephone number:** Product Safety Department AKEMI chemisch technische Spezialfabrik GmbH
Tel. +49(0)911-64296-59
Reachable during the following office hours:
Monday – Thursday from 07:30 a.m. to 16:30 p.m.
Friday from 07:30 a.m. to 13:30 p.m.

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SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· Classification according to Regulation (EC) No 1272/2008

Flam. Liq. 3	H226	Flammable liquid and vapour.
Acute Tox. 4	H332	Harmful if inhaled.
Eye Irrit. 2	H319	Causes serious eye irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.
STOT SE 3	H335-H336	May cause respiratory irritation. May cause drowsiness or dizziness.
Aquatic Chronic 3	H412	Harmful to aquatic life with long lasting effects.

· Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor if you feel unwell.

· Storage: Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

· **2.2 Label elements**

· Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.

· Hazard pictograms

GHS02 GHS07

· Signal word Warning

· Hazard-determining components of labelling: Hexamethylene-1,6-diisocyanate homopolymer
benzene, 2,4-diisocyanato-1-methyl-,homopolymer
n-butyl acetate

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4-methyl-m-phenylene diisocyanate
hexamethylene-di-isocyanate

· Hazard statements

H226	Flammable liquid and vapour.
H332	Harmful if inhaled.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H335-H336	May cause respiratory irritation. May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

· Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe vapours.
P280	Wear protective gloves / eye protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P312	IF INHALED: Call a POISON CENTER/doctor if you feel unwell.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· Additional information: EUH066 Repeated exposure may cause skin dryness or cracking.
Contains isocyanates. May produce an allergic reaction.

· **2.3 Other hazards**

· Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

· Determination of endocrine-disrupting properties: For information on endocrine disrupting properties see section 11.

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SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**

· Description: Mixture: consisting of the following components.

· Dangerous components:

CAS: 123-86-4 EINECS: 204-658-1 Index number: 607-025-00-1 Reg.nr.: 01-2119485493-29	n-butyl acetate Flam. Liq. 3, H226 STOT SE 3, H336 EUH066	25-50%
CAS: 28182-81-2 EC number: 931-274-8 Reg.nr.: 01-2119485796-17-0000	Hexamethylene-1,6-diisocyanate homopolymer Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335 EUH204	25-50%

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CAS: 26006-20-2	benzene, 2,4-diisocyanato-1-methyl-,homopolymer Eye Irrit. 2, H319; Skin Sens. 1, H317	12.5-25%
CAS: 128601-23-0 EC number: 918-668-5 Index number: 649-356-00-4 Reg.nr.: 01-2119455851-35	Hydrocarbons, C9, aromatics Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 STOT SE 3, H335-H336 EUH066	1-5%
CAS: 822-06-0 EINECS: 212-485-8 Index number: 615-011-00-1 Reg.nr.: 01-2119457571-37-0001	hexamethylene-di-isocyanate Acute Tox. 3, H311; Acute Tox. 1, H330 Resp. Sens. 1, H334 Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 EUH204 Specific concentration limits: Resp. Sens. 1; H334: C ≥ 0.5 % Skin Sens. 1; H317: C ≥ 0.5 %	<1%
CAS: 584-84-9 EINECS: 209-544-5 Index number: 615-006-00-4	4-methyl-m-phenylene diisocyanate Acute Tox. 2, H330 Resp. Sens. 1, H334; Carc. 2, H351 Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 Aquatic Chronic 3, H412 EUH204 Specific concentration limit: Resp. Sens. 1; H334: C ≥ 0.1 %	<1%

· Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· General information: Take affected persons out into the fresh air.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation: Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.

· After skin contact: If skin irritation continues, consult a doctor.
Immediately wash with water and soap and rinse thoroughly.

· After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

· After swallowing: If symptoms persist consult doctor.

· **4.2 Most important symptoms and effects, both acute and delayed**

Breathing difficulty
Headache
Dizziness
Gastric or intestinal disorders
Dizziness
Nausea
Allergic reactions

· Hazards Danger of impaired breathing.

· **4.3 Indication of any immediate medical attention and special treatment needed**

If swallowed or in case of vomiting, danger of entering the lungs.

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If swallowed, gastric irrigation with added, activated carbon.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· Suitable extinguishing agents: CO_2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· For safety reasons unsuitable extinguishing agents: Water with full jet

· **5.2 Special hazards arising from the substance or mixture** Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Carbon monoxide (CO)
Nitrogen oxides (NOx)
Hydrogen cyanide (HCN)

· **5.3 Advice for firefighters**

· Protective equipment: Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.
Mount respiratory protective device.

· Additional information Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures** Ensure adequate ventilation
Keep away from ignition sources.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.

· **6.2 Environmental precautions:** Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.

· **6.4 Reference to other sections** See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling** Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Keep receptacles tightly sealed.
Store in cool, dry place in tightly closed receptacles.
Keep away from heat and direct sunlight.
Use only in well ventilated areas.
Ensure good ventilation/exhaustion at the workplace.

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· Information about fire - and explosion protection: Fumes can combine with air to form an explosive mixture.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· **7.2 Conditions for safe storage, including any incompatibilities**
· Storage:
· Requirements to be met by storerooms and receptacles: Store only in the original receptacle.
Prevent any seepage into the ground.
· Information about storage in one common storage facility: Store away from foodstuffs.
· Further information about storage conditions: Protect from humidity and water.
Protect from frost.
Keep container tightly sealed.
· Storage class: 3
· **7.3 Specific end use(s)** No further relevant information available.

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SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· Ingredients with limit values that require monitoring at the workplace:	
123-86-4 n-butyl acetate	
IOELV	Short-term value: 723 mg/m³, 150 ppm Long-term value: 241 mg/m³, 50 ppm
28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer	
TLV	Short-term value: 1 mg/m³
822-06-0 hexamethylene-di-isocyanate	
TLV	Short-term value: 0.15 mg/m³, 0.02 ppm Long-term value: 0.075 mg/m³, 0.01 ppm

· DNELs		
123-86-4 n-butyl acetate		
Oral	DNEL (Kurzzeit-akut)	2 mg/kg bw/day (BEV)
	DNEL (Langzeit-wiederholt)	2 mg/kg bw/day (BEV)
Dermal	DNEL (Kurzzeit-akut)	11 mg/kg bw/day (ARB)
		6 mg/kg bw/day (BEV)
	DNEL (Langzeit-wiederholt)	11 mg/kg bw/day (ARB)
		6 mg/kg bw/day (BEV)
Inhalative	DNEL (Kurzzeit-akut)	960 mg/m³ Air (ARB)
		859.7 mg/m³ Air (BEV)
	DNEL (Langzeit-wiederholt)	480 mg/m³ Air (ARB)
		102.34 mg/m³ Air (BEV)
28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer		
Inhalative	DNEL (Kurzzeit-akut)	1 mg/m³ Air (ARB)
	DNEL (Langzeit-wiederholt)	0.5 mg/m³ Air (ARB)
128601-23-0 Hydrocarbons, C9, aromatics		
Oral	DNEL (Langzeit-wiederholt)	7.5 mg/kg bw/day (BEV)
Dermal	DNEL (Langzeit-wiederholt)	12.5 mg/kg bw/day (ARB)
		7.5 mg/kg bw/day (BEV)

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Inhalative	DNEL (Langzeit-wiederholt)	151 mg/m³ Air (ARB) 32 mg/m³ Air (BEV)
822-06-0 hexamethylene-di-isocyanate		
Inhalative	DNEL (Kurzzeit-akut)	0.07 mg/m³ Air (ARB)
	DNEL (Langzeit-wiederholt)	0.035 mg/m³ Air (ARB)

· PNECs

123-86-4 n-butyl acetate	
PNEC (wässrig)	35.6 mg/l (KA) 0.018 mg/l (MW) 0.18 mg/l (SW) 0.36 mg/l (WAS)
PNEC (fest)	0.0903 mg/kg Trockengew (BO) 0.0981 mg/kg Trockengew (MWS) 0.981 mg/kg Trockengew (SWS)
28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer	
PNEC (wässrig)	38.28 mg/l (KA) 0.0127 mg/l (MW) 0.127 mg/l (SW) 1.27 mg/l (WAS)
PNEC (fest)	53,200 mg/kg Trockengew (BO) 26,670 mg/kg Trockengew (MWS) 266,700 mg/kg Trockengew (SWS)
822-06-0 hexamethylene-di-isocyanate	
PNEC (wässrig)	8.42 mg/l (KA) >0.00774 mg/l (MW) >0.0774 mg/l (SW) 0.774 mg/l (WAS)
PNEC (fest)	2.6 mg/kg Trockengew (BO) 1.33 mg/kg Trockengew (MWS) 13.34 mg/kg Trockengew (SWS)

· Additional information: The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· Appropriate engineering controls No further data; see section 7.

· Individual protection measures, such as personal protective equipment

· General protective and hygienic measures:
Apply solvent resistant skin cream before starting work.
Use skin protection cream for skin protection.
Clean skin thoroughly immediately after handling the product.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.

· Respiratory protection: Filter A/P2
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· Hand protection Preventive skin protection by use of skin-protecting agents is recommended.

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After use of gloves apply skin-cleaning agents and skin cosmetics.

Protective gloves

The protection gloves to be used have to comply with the specifications of the directive 89/686/EC and the directive derived decree EN374, respectively, e.g. the above listed protection glove type.
The mentioned permeation times´ data were generated and verified with material samples of the recommended protection glove type in the scope of laboratory anylyses of the company KCL GmbH in compliance with EN374.
This recommendation refers exclusively to the material safety data sheet referenced product delivered by Akemi and the indicated field of application. In case of product dilution or in case of mixture with different substances or chemicals, and in condition of EN374 deviation the producer of CE-approved protection gloves must be contacted for detailed information (e.g., KCL GmbH, Germany, 36124 Eichenzell, internet: http://www.kcl.de).
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves
Nitrile rubber, NBR
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material
Value for the permeation: Level ≤ 6, 480 min
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· For the permanent contact gloves made of the following materials are suitable:
Butyl rubber, BR
Butoject (KCL, Art_No. 897, 898)

· As protection from splashes gloves made of the following materials are suitable:
Nitrile rubber, NBR
Camatril (KCL, 730, 731, 732, 733)
Butyl rubber, BR
Butoject (KCL, Art_No. 897, 898)

· Not suitable are gloves made of the following materials:
Natural rubber, NR
Neoprene gloves
Leather gloves
Strong material gloves

· Eye/face protection

Tightly sealed goggles

· Body protection:
Protective work clothing

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SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· General Information	
· Colour:	Colourless
· Odour:	Characteristic
· Odour threshold:	Not determined.
· Melting point/freezing point:	Undetermined.
· Boiling point or initial boiling point and boiling range	124-128 °C (123-86-4 n-butyl acetate)
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	3 Vol %
· Upper:	10.4 Vol %
· Flash point:	27 °C (123-86-4 n-butyl acetate)
· Auto-ignition temperature:	370 °C (123-86-4 n-butyl acetate)
· Decomposition temperature:	Not determined.
· pH	Not determined. Not applicable
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Not miscible or difficult to mix.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	10.7 hPa (123-86-4 n-butyl acetate)
· Vapour pressure at 50 °C:	55 hPa
· Density and/or relative density	
· Density at 20 °C:	1.07 g/cm³
· Relative density	Not determined.
· Vapour density	Not determined.

· **9.2 Other information**	
· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Solvent content:	
· Organic solvents:	43.5 %
· Change in condition	
· Evaporation rate	Not determined.

· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Flammable liquid and vapour.
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void

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· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.

· **10.2 Chemical stability**

· Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.

· **10.3 Possibility of hazardous reactions** Reacts with strong oxidising agents.
Reacts with strong acids and alkali.
Reacts with amines.
Reacts with alcohols.
Reacts with water.

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:** No further relevant information available.

· **10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Isocyanate
Hydrogen cyanide (prussic acid)

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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.

· LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)		
Inhalative	LC50/4 h	1.22-1.7 mg/l (rat)

123-86-4 n-butyl acetate		
Oral	LD50	10,760 mg/kg (rat) (OECD 423)
Dermal	LD50	>14,112 mg/kg (rabbit) (OECD 402)
Inhalative	LC50/4 h	23.4 mg/l (rat) (OECD 403)
	LC50	390 mg/m3 (rat)
	LC50/48h	64 mg/l (Brachydanio rerio)
28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer		
Oral	LD50	>2,000 mg/kg (rat) (OECD 423)
	NOAEL-Werte	3 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit) (OECD 402)
		>2,000 mg/kg (rat) (OECD 402)
Inhalative	LC50/4h	400 mg/m3 (rat)
	LC50/4 h	0.39-0.543 mg/l (rat) (OECD TG 403)
128601-23-0 Hydrocarbons, C9, aromatics		
Oral	LD50	3,495 mg/kg (rat) (OECD 401)

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Dermal	LD50	>3,160 mg/kg (rabbit) (OECD 402)
Inhalative	LC50/4 h	>6,193 mg/l (rat)
822-06-0 hexamethylene-di-isocyanate		
Oral	LD50	746 mg/kg (rat) (OECD 401)
Dermal	LD50	593 mg/kg (rabbit)
		<7,000 mg/kg (rat) (OECD 402)
Inhalative	LC50/4 h	0.124 mg/l (rat) (OECD 403)
	NOAEL	0.41 mg/m³ (rat)
584-84-9 4-methyl-m-phenylene diisocyanate		
Inhalative	LC50/4 h	0.5 mg/l (ATE)

· Primary irritant effect:

· Skin corrosion/irritation — Based on available data, the classification criteria are not met.

· Serious eye damage/irritation — Causes serious eye irritation.

· Respiratory or skin sensitisation — May cause an allergic skin reaction.

· Germ cell mutagenicity — Based on available data, the classification criteria are not met.

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

· Reproductive toxicity — Based on available data, the classification criteria are not met.

· STOT-single exposure — May cause respiratory irritation. May cause drowsiness or dizziness.

· STOT-repeated exposure — Based on available data, the classification criteria are not met.

· Aspiration hazard — Based on available data, the classification criteria are not met.

· **11.2 Information on other hazards**

· Endocrine disrupting properties

None of the ingredients is listed.

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SECTION 12: Ecological information

· **12.1 Toxicity**

· Aquatic toxicity:

123-86-4 n-butyl acetate	
EC50/24h	72.8 mg/l (daphnia magna) (DIN 38412)
EC50/96h	320 mg/l (algae)
LC50/24h	205 mg/l (daphnia magna)
IC50/72h	648 mg/l (Desmodesmus subspicatus)
EC10/18h	959 mg/l (pseudomonas putida)
EC50/48h	44 mg/l (daphnia magna) (OECD 202)
ErC50/72h	675 mg/l (Scenedesmus subspicatus)
EC50/16h	959 mg/l (pseudomonas putida)
NOEC	200 mg/kg (Desmodesmus subspicatus)
NOEC/21d	23 mg/l (daphnia magna) (OECD 211)
EC50/72h	647.7 mg/l (Desmodesmus subspicatus) (Zellvermehrungshemmtest)
	397 mg/l (Scenedesmus subspicatus)
LC50/96h	62 mg/l (Danio rerio.)
	81 mg/l (piscis)
	100 mg/l (lepomis macrochirus)
	62 mg/l (Leuciscus idus) (DIN 38412)
	18 mg/l (pimephales promelas) (OECD 203)

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28182-81-2 Hexamethylene-1,6-diisocyanate homopolymer	
EC50	3,828 mg/l (BES) (OECD 209)
LC 0/96h	>82.8 mg/l (Brachydanio rerio) (OECD 203)
EC50/48h	127 mg/l (daphnia magna) (RL 67/548/EWG, Anhang V, C.3.)
ErC50/72h	>1,000 mg/l (Desmodesmus subspicatus) (DIN 38412)
EC0	>100 mg/l (daphnia magna) (OECD 202)
EL50/48h	127 mg/l (daphnia magna)
LL50/96h	8.9 mg/l (Brachydanio rerio)
EC10	370 mg/l (Desmodesmus subspicatus)
EC50/72h	199 mg/l (Scenedesmus subspicatus) (OECD 201)
LC50/96h	>100 mg/l (Danio rerio.) (RL 67/548/EWG, Anhang V, C.1.)
128601-23-0 Hydrocarbons, C9, aromatics	
EC50/96h	9.2 mg/l (Oncorhynchus mykiss)
LC50	1-10 mg/l (daphnia magna)
ErC50/72h	0.42 mg/l (Pseudokirchneriella subcapitata) (OECD 201)
EL50/48h	3.2 mg/l (daphnia magna) (OECD 202)
EL50/72h	2.6-2.9 mg/l (Pseudokirchneriella subcapitata)
	2.9 mg/l (selenastrum capricornutum)
LL50/96h	9.2 mg/l (Oncorhynchus mykiss) (OECD 203)
LL0/96h	9.2 mg/l (Oncorhynchus mykiss)
NOELR/72h	1 mg/l (Pseudokirchneriella subcapitata)
EC50/48h	7.4 mg/l (daphnia magna)
EC50/72h	0.29 mg/l (Pseudokirchneriella subcapitata) (OECD 201)
822-06-0 hexamethylene-di-isocyanate	
EC50	842 mg/l (bacteria) (OECD 209)
LC 0/96h	82.8 mg/l (Brachydanio rerio) (OECD TG 203)
ErC50/72h	>77.4 mg/l (Desmodesmus subspicatus) (EU C.3)
EC0	>89.1 mg/l (daphnia magna) (OECD TG 202)
NOEC	11.7 mg/kg (Desmodesmus subspicatus) (EU C.3)
EC50/72h	>77.4 mg/l (Scenedesmus subspicatus) (OECD TG 201)
LC50/96h	22 mg/l (Brachydanio rerio)

· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **12.5 Results of PBT and vPvB assessment**
· PBT: Not applicable.
· vPvB: Not applicable.
· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
· **12.7 Other adverse effects**
· Remark: Harmful to fish
· Additional ecological information:
· General notes: Do not allow product to reach ground water, water course or sewage system.
Harmful to aquatic organisms
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· Recommendation: Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packaging:
· Recommendation: Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.
· Recommended cleansing agents: Alcohol

SECTION 14: Transport information

· **14.1 UN number or ID number**
· ADR, IMDG, IATA: UN1263

· **14.2 UN proper shipping name**
· ADR: 1263 PAINT RELATED MATERIAL
· IMDG, IATA: PAINT RELATED MATERIAL

· **14.3 Transport hazard class(es)**

· ADR

· Class: 3 (F1) Flammable liquids.
· Label: 3

· IMDG, IATA

· Class: 3 Flammable liquids.
· Label: 3

· **14.4 Packing group**
· ADR, IMDG, IATA: III

· **14.5 Environmental hazards:**
· Marine pollutant: No

· **14.6 Special precautions for user**: Warning: Flammable liquids.
· Hazard identification number (Kemler code): 30
· EMS Number: F-E,S-E
· Stowage Category: A

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

· Transport/Additional information:

· ADR
· Limited quantities (LQ): 5L
· Excepted quantities (EQ): Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

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· Transport category	3
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1263 PAINT RELATED MATERIAL, 3, III

*

SECTION 15: Regulatory information

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

· Directive 2012/18/EU	
· Named dangerous substances - ANNEX I	None of the ingredients is listed.
· Seveso category	P5c FLAMMABLE LIQUIDS
· Qualifying quantity (tonnes) for the application of lower-tier requirements	5,000 t
· Qualifying quantity (tonnes) for the application of upper-tier requirements	50,000 t
· REGULATION (EC) No 1907/2006 ANNEX XVII	Conditions of restriction: 3, 74

· DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

· REGULATION (EU) 2019/1148

· Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

None of the ingredients is listed.

· Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients is listed.

· Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

· Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

· National regulations:

· Information about limitation of use:	Employment restrictions concerning pregnant and lactating women must be observed. Employment restrictions concerning juveniles must be observed.
· Waterhazard class:	Water hazard class 1 (Self-assessment): slightly hazardous for water.

· Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients is listed.

· VOC EU 463.5 g/l

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· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
This Safety Data Sheets is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· Department issuing SDS: Laboratory
· Date of previous version: 12.01.2023
· Version number of previous version: 4
· Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 1: Acute toxicity – Category 1
Acute Tox. 2: Acute toxicity – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3