

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.09.2020


Version number 5

Revision: 24.09.2020

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

- 1.1 Product identifier
 - Trade name: **KEMPERDUR HB Coating (B)**
 - 1.2 Relevant identified uses of the substance or mixture and uses advised against
 - Application of the substance / the mixture
 - 1.3 Details of the supplier of the safety data sheet
 - Manufacturer/Supplier:
 - Further information obtainable from:
 - 1.4 Emergency telephone number:
- Identified use: intended for professional use only!
- Coating
- KEMPER SYSTEM GmbH & Co. KG
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Universitätsmedizin der Johannes Gutenberg-Universität Mainz

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
 - Classification according to Regulation (EC) No 1272/2008
 - Acute Tox. 4 H332 Harmful if inhaled.
 - Skin Sens. 1 H317 May cause an allergic skin reaction.
 - STOT SE 3 H335 May cause respiratory irritation.
 - Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.
 - 2.2 Label elements
 - Labelling according to Regulation (EC) No 1272/2008
 - Hazard pictograms
 - Signal word
 - Hazard-determining components of labelling:
 - Hazard statements
 - Precautionary statements
 - Additional information:
 - 2.3 Other hazards
 - Results of PBT and vPvB assessment
 - PBT:
 - vPvB:
- The product is classified and labelled according to the CLP regulation.
- 

GHS07
- Warning
- Hexamethylene diisocyanate, oligomers
Hexamethylene diisocyanate, oligomers; Uretdion type
Isophorondiisocyanate homopolymer
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate
hexamethylene-di-isocyanate
- H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- EUH204 Contains isocyanates. May produce an allergic reaction.
- Not applicable.
Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
 - Description:
- Mixture: consisting of the following components.

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- Dangerous components:		
CAS: 28182-81-2 NLP: 500-060-2 Reg.nr.: 01-2119485796-17	Hexamethylene diisocyanate, oligomers Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	25-50%
CAS: 53880-05-0 EC number: 931-312-3 Reg.nr.: 01-2119488734-24	Isophorondiisocyanate homopolymer Skin Sens. 1, H317; STOT SE 3, H335	25-50%
CAS: 28182-81-2 NLP: 500-060-2 Reg.nr.: 01-2119488177-26	Hexamethylene diisocyanate, oligomers; Uretdion type Acute Tox. 3, H331; Skin Sens. 1, H317; STOT SE 3, H335	12.5-25%
CAS: 28182-81-2 NLP: 500-060-2 Reg.nr.: 01-2119488934-20	Hexamethylene diisocyanate Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	12.5-25%
EC number: 918-668-5 Reg.nr.: 01-2119455851-35	hydrocarbons, C9, aromatic Flam. Liq. 3, H226; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; STOT SE 3, H335-H336	2.5-10%
CAS: 4098-71-9 EINECS: 223-861-6 Index number: 615-008-00-5 Reg.nr.: 01-2119490408-31	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate Acute Tox. 1, H330; Resp. Sens. 1, H334; Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	<0.5%
CAS: 822-06-0 EINECS: 212-485-8 Index number: 615-011-00-1 Reg.nr.: 01-2119457571-37	hexamethylene-di-isocyanate 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	<0.5%

- 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:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Do not leave affected persons unattended.

Personal protection for the First Aider.

Take affected persons out of danger area and lay down.

- After inhalation:

In case of unconsciousness place patient stably in side position for transportation.

Supply fresh air; consult doctor in case of complaints.

- After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Seek medical treatment in case of complaints.

- After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

Protect unharmed eye.

- After swallowing:

If symptoms persist consult doctor.

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

No further relevant information available.

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

No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media

- Suitable extinguishing agents:

CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use fire extinguishing methods suitable to surrounding conditions.

- 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.

- 5.3 Advice for firefighters

- Protective equipment:

Do not inhale explosion gases or combustion gases.

- Additional information

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

Wear protective equipment. Keep unprotected persons away.

Avoid contact with skin and eyes

Ensure adequate ventilation

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- **6.2 Environmental precautions:** Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
Prevent from spreading (e.g. by damming-in or oil barriers).
- **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 item 13.
Do not flush with water or aqueous cleansing agents
- **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** Store in cool, dry place in tightly closed receptacles.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Store in dry conditions.
Protect from frost.
Keep container tightly sealed.
Recommended storage temperature: 5-30 °C
- **Storage class:** 3
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

- Ingredients with limit values that require monitoring at the workplace:	
4098-71-9 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	
WEL	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO
822-06-0 hexamethylene-di-isocyanate	
WEL	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO

- **Regulatory information** WEL: EH40/2020

- Ingredients with biological limit values:	
4098-71-9 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	
BMGV	1 µmol creatinine/mol Medium: urine Sampling time: At the end of the period od exposure Parameter: isocyanate-derived diamine
822-06-0 hexamethylene-di-isocyanate	
BMGV	1 µmol creatinine/mol Medium: urine Sampling time: At the end of the period od exposure Parameter: isocyanate-derived diamine

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

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- Respiratory protection:

When used properly and under normal conditions, breathing protection is not required.
Use suitable respiratory protective device in case of insufficient ventilation.
Filter A/P2
Respiratory protection - Gas filters and combination filters according to (DIN EN 141)

- Protection of hands:



Protective gloves

Check protective gloves prior to each use for their proper condition.
Only use chemical-protective gloves with CE-labelling of category III.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
After use of gloves apply skin-cleaning agents and skin cosmetics.

- Material of gloves

Recommended materials:
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.5 mm
Penetration time (min.): < 480

- Penetration time of glove material

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.
The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

- As protection from splashes gloves made of the following materials are suitable:

Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.1 mm
Penetration time (min.): < 10

- Eye protection:



Tightly sealed goggles

- Body protection:

protective clothing (EN 13034)

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties

- General Information

- Appearance:

Form: Fluid
Colour: Clear
- Odour: Characteristic
- Odour threshold: Not determined.

- pH-value: Not determined.

- Change in condition

Melting point/freezing point: Undetermined.
Initial boiling point and boiling range: Undetermined.

- Flash point: 69 °C (ISO 3679)

- Flammability (solid, gas): Not applicable.

- Decomposition temperature: Not determined.

- Auto-ignition temperature: Product is not selfigniting.

- Explosive properties: Not determined.

- Explosion limits:

Lower: Not determined.
Upper: Not determined.

- Density at 20 °C: 1.1 g/cm³

- Relative density Not determined.

- Vapour density Not determined.

- Evaporation rate Not determined.

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- Solubility in / Miscibility with water:	Not miscible or difficult to mix.
- Partition coefficient: n-octanol/water:	Not determined.
- Viscosity: Dynamic at 20 °C: Kinematic:	2800 mPas Not determined.
- Solvent content: VOC (EC)	2.45 %
- 9.2 Other information	No further relevant information available.

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 according to specifications.
- 10.3 Possibility of hazardous reactions	Exothermic reaction with amines and alcohols; gradual development of CO ₂ with water, pressure build-up in closed containers; risk of bursting.
- 10.4 Conditions to avoid	No further relevant information available.
- 10.5 Incompatible materials:	No further relevant information available.
- 10.6 Hazardous decomposition products:	No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects	
- Acute toxicity	Harmful if inhaled.

- LD/LC50 values relevant for classification:

28182-81-2 Hexamethylene diisocyanate, oligomers

Oral	LD50	>5,000 mg/kg (rat) (OECD 423; female)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402) >2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	0.39 mg/l (rat) (OCED 403; Pauluhn, J. (2008).)

53880-05-0 Isophorondiisocyanate homopolymer

Oral	LD50	>14,000 mg/kg (rat) (OECD 401)
Inhalative	LC50/4 h	>5 mg/l (rat)

28182-81-2 Hexamethylene diisocyanate, oligomers; Uretdion type

Oral	LD50	>5,665 mg/kg (rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
Inhalative	LC50/4 h	0.158 mg/l (rat)
	ATEmix	0.5 mg/l (rat) (*2)

28182-81-2 Hexamethylene diisocyanate

Oral	LD50	>2,500 mg/kg (rat) (OECD 423; female)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402) >2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	0.39 mg/l (rat) ((dust & fork) OCED 403; Pauluhn, J. (2008).)
	ATEmix	1.5 mg/l (rat) (*2)

hydrocarbons, C9, aromatic

Oral	LD50	>3,492 mg/kg (rat) (OECD 401)
Dermal	LD50	>3,160 mg/kg (rabbit) (OECD 402)

4098-71-9 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate

Inhalative	LC50/4 h	0.05 mg/l (ATE)
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822-06-0 hexamethylene-di-isocyanate

Oral	LD50	959 mg/kg (rat) (OECD 401)
Dermal	LD50	>7,000 mg/kg (rat) (OECD 402)
Inhalative	LC50/4 h	0.124 mg/l (rat) (OECD 403)
	ATEmix	1.5 mg/l (rat) (*2)

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<ul style="list-style-type: none"> - Primary irritant effect: - Skin corrosion/irritation - Serious eye damage/irritation - Respiratory or skin sensitisation - Additional toxicological information: - CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction) - Germ cell mutagenicity - Carcinogenicity - Reproductive toxicity - STOT-single exposure - STOT-repeated exposure - Aspiration hazard 	<p>Based on available data, the classification criteria are not met.</p> <p>Based on available data, the classification criteria are not met.</p> <p>May cause an allergic skin reaction.</p> <p>* ² Comment on ATE Information test atmosphere dust / mist: The test atmosphere generated in the animal study is not representative of the workplace situation, the way the substance is marketed or likely to be used. That's why it can Test result can not be used directly for hazard assessment. Based on a Expert judgment and weight-of-evidence is a modified classification of the acute Inhalation toxicity justified. Investigation on a comparable product. Method: Expert assessment of the manufacturer.</p> <p>Based on available data, the classification criteria are not met.</p> <p>Based on available data, the classification criteria are not met.</p> <p>Based on available data, the classification criteria are not met.</p> <p>May cause respiratory irritation.</p> <p>Based on available data, the classification criteria are not met.</p> <p>Based on available data, the classification criteria are not met.</p>
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SECTION 12: Ecological information

- 12.1 Toxicity

- Aquatic toxicity:

28182-81-2 Hexamethylene diisocyanate, oligomers

ErC50	>1,000 mg/l (DESMODESMUS SUBSPICATUS) (0-72h static / EU C.3)
	>199 mg/l (Scenedesmus subspicatus) (72h; guideline 67/548/EWG annex V; C3)
EC50	>100 mg/l (DESMODESMUS SUBSPICATUS) (72; OECD 201)
	>100 mg/l (Daphnia magna) (48h)
EC50	>10,000 mg/l (Belebtschlamm) (3h, EG/RL 88-302-EEC)
EC50	>1,000 mg/l (Scenedesmus subspicatus) (72h / DIN 38412)
	127 mg/l (daphnia) (48h static / EU C.2)
LC 50	8.9 mg/l (Brachydanio rerio (Ricefish))
LC50	>100 mg/l (Danio rerio (Zebrafisch)) (96h)

53880-05-0 Isophorondiisocyanate homopolymer

LC50/96 h	>1.51 mg/l (Cyprinus Carpio) (Richtlinie 67/548/EWG, Anhang V, C.1.)
EC50	>3.36 mg/l (Daphnia magna) (OECD 202)
EC50	>10,000 mg/l (Belebtschlamm) (OECD 209)

28182-81-2 Hexamethylene diisocyanate, oligomers; Uretdion type

ErC50	50-100 mg/l (Scenedesmus subspicatus) (72h; guideline 67/548/EWG annex V; C3)
EC50	>100 mg/l (Daphnia magna) (48h, guideline 67/548/EWG annex 5, V2)
EC50	>5,560 mg/l (Belebtschlamm) (OECD 209)

28182-81-2 Hexamethylene diisocyanate

ErC50	>1,000 mg/l (DESMODESMUS SUBSPICATUS) (0-72h static / EU C.3)
	>199 mg/l (Scenedesmus subspicatus) (72h; guideline 67/548/EWG annex V; C3)
EC50	>100 mg/l (DESMODESMUS SUBSPICATUS) (72; OECD 201)
	>100 mg/l (Daphnia magna) (48h)
EC50	>10,000 mg/l (Belebtschlamm) (3h, EG/RL 88-302-EEC)
EC50	>1,000 mg/l (Scenedesmus subspicatus) (72h / DIN 38412)
	127 mg/l (daphnia) (48h static / EU C.2)
LC 50	8.9 mg/l (Brachydanio rerio (Ricefish))
LC50	>100 mg/l (Danio rerio (Zebrafisch)) (96h)

hydrocarbons, C9, aromatic

LL 50	9.2 mg/l (Oncorhynchus mykiss (Regenbogenforelle)) (96h; OECD 203)
EL50	2.9 mg/l (Pseudokirchneriella subcapitata) (72h; OECD 201)
	3.2 mg/l (Daphnia magna) (48h; OECD 202)
EC50	>99 mg/l (Belebtschlamm) (10 min.; OECD 209)

822-06-0 hexamethylene-di-isocyanate

ErC50	>77.4 mg/l (DESMODESMUS SUBSPICATUS)
LC50/96 h	22 mg/l (Brachydanio rerio (Ricefish))

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NOEC	11.7 mg/l (DESMODESMUS SUBSPICATUS) (72 h - EU method C.3)
EC0	>89.1 mg/l (daphnia) (48 hour - EU C.2)
EC50	842 mg/l (Bacteria) (3h-static - OECD 209)
LOEC	12.6 mg/l (DESMODESMUS SUBSPICATUS) (72 h - EU method C.3)
- 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.
- Ecotoxicological effects:	
- Remark:	Harmful to fish
- Additional ecological information:	
- General notes:	Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Harmful to aquatic organisms
- 12.5 Results of PBT and vPvB assessment	
- PBT:	Not applicable.
- vPvB:	Not applicable.
- 12.6 Other adverse effects	No further relevant information available.

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. Disposal according to official regulations
- European waste catalogue	
08 04 09*	waste adhesives and sealants containing organic solvents or other hazardous substances
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09
- Uncleaned packaging:	
- Recommendation:	Disposal must be made according to official regulations.

SECTION 14: Transport information

- 14.1 UN-Number	
- ADR, ADN, IMDG, IATA	Void
- 14.2 UN proper shipping name	
- ADR, ADN, IMDG, IATA	Void
- 14.3 Transport hazard class(es)	
- ADR, ADN, IMDG, IATA	
- Class	Void
- 14.4 Packing group	
- ADR, IMDG, IATA	Void
- 14.5 Environmental hazards:	
- Marine pollutant:	No
- 14.6 Special precautions for user	Not applicable.
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
- UN "Model Regulation":	Void

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 REGULATION (EC) No 1907/2006 ANNEX XVII	None of the ingredients is listed. Conditions of restriction: 3
- 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.

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- **National regulations:**
- **Information about limitation of use:** Employment restrictions concerning women of child-bearing age must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
Employment restrictions concerning juveniles must be observed.
- **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.
The safety data sheet issued is also compliant with the regulation Annex I of Regulation (EU) no. 453/2010 and Annex II of Regulation (EU) no. 2015/830

- **Relevant phrases**
 - H226 Flammable liquid and vapour.
 - H302 Harmful if swallowed.
 - H304 May be fatal if swallowed and enters airways.
 - H315 Causes skin irritation.
 - H317 May cause an allergic skin reaction.
 - H319 Causes serious eye irritation.
 - H330 Fatal if inhaled.
 - H331 Toxic 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.
 - H411 Toxic to aquatic life with long lasting effects.

- **Department issuing SDS:** research & development
- **Contact:** research & development
- **Abbreviations and acronyms:**
 - ADR: Accord européen sur le transport 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)
 - VOC: Volatile Organic Compounds (USA, EU)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - Flam. Liq. 3: Flammable liquids – Category 3
 - Acute Tox. 1: Acute toxicity - inhalation – Category 1
 - Acute Tox. 3: Acute toxicity - inhalation – Category 3
 - Acute Tox. 4: Acute toxicity - inhalation – Category 4
 - 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
 - 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

- **Sources**
 - www.echa.europa.eu
 - www.baua.de
 - IFA: Institute für Occupational Safety and Health of the German Social Accident Insurance:
 - www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index.jsp
 - www.dguv.de/ifa/gestis/gestis-dnel-liste

- *** Data compared to the previous version altered.**