

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.07.2018

Version number 4

Revision: 04.07.2018


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


- **1.1 Product identifier**
- **Trade name:** **KEMPEROL 022 (B)**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
 - Identified use: intended for professional use only!
- **Application of the substance / the mixture** Waterproofing
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** KEMPER SYSTEM GmbH & Co. KG
Holländische Strasse 32-36
34246 Vellmar
Deutschland / Germany
Telefon: +49 (0)561 / 8295-0
Telefax: +49 (0)561 / 8295-5110
E-Mail: MSDS@KEMPER-SYSTEM.COM
- **Further information obtainable from:** Research and Development
- **1.4 Emergency telephone number:** Giftinformationszentrum der Länder Rheinland-Pfalz und Hessen
Langenbeckstraße 1; Gebäude 601; 55131 Mainz
Tel. Nr.: +49 (0)6131 / 19 24 0
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**
 - Skin Corr. 1B H314 Causes severe skin burns and eye damage.
 - Eye Dam. 1 H318 Causes serious eye damage.
 - Skin Sens. 1 H317 May cause an allergic skin reaction.
 - Repr. 2 H361 Suspected of damaging fertility or the unborn child.
 - Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms**

The product is classified and labelled according to the CLP regulation.


GHS05


GHS07


GHS08


GHS09
- **Signal word** Danger
- **Hazard-determining components of labelling:**

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine
Phenol, styrenated
Reaction mass of 4-tert-butylphenol and 1,3- phenylenedimethanamine and 2-([3-(aminomethyl) benzyl] amino)methyl)-4-tert-butylphenol
Polyoxypropylenediamine
2,4,6-tris(dimethylaminomethyl)phenol
3-aminomethyl-3,5,5-trimethylcyclohexylamine
3,3,5-trimethylhexamethylene-diamine
3-aminopropyldimethylamine
- **Hazard statements**

H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H361 Suspected of damaging fertility or the unborn child.
H411 Toxic to aquatic life with long lasting effects.
- **Precautionary statements**

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P362+P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

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- vPvB: Not applicable. (Contd. of page 1)

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures

- **Description:** Mixture: consisting of the following components.

- Dangerous components:

CAS: 61788-44-1 EINECS: 262-975-0 Reg.nr.: 01-2119979575-18	Phenol, styrenated Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Skin Sens. 1A, H317	≥12.5-≤50%
CAS: 38294-64-3 NLP: 500-101-4 Reg.nr.: 01-2119965165-33	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine Skin Corr. 1B, H314; Eye Dam. 1, H318; Skin Sens. 1, H317; Aquatic Chronic 3, H412	12.5-25%
CAS: 9046-10-0 Reg.nr.: 01-2119557899-12	Polyoxypropylenediamine Skin Corr. 1B, H314; Eye Dam. 1, H318; Aquatic Chronic 2, H411	≥2.5-≤25%
CAS: 100-51-6 EINECS: 202-859-9 Index number: 603-057-00-5 Reg.nr.: 01-2119492630-38	Benzyl alcohol Acute Tox. 4, H302; Acute Tox. 4, H332	≥2.5-≤25%
EC number: 939-071-6 Reg.nr.: 01-2119977133-36	Reaction mass of 4-tert-butylphenol and 1,3- phenylenedimethanamine and 2-([3-(aminomethyl) benzyl] amino)methyl)-4-tert-butylphenol Repr. 2, H361; Skin Corr. 1B, H314; Eye Dam. 1, H318; Aquatic Chronic 2, H411; Skin Sens. 1, H317; STOT SE 3, H335	12.5-25%
CAS: 90-72-2 EINECS: 202-013-9 Index number: 603-069-00-0 Reg.nr.: 01-2119560597-27	2,4,6-tris(dimethylaminomethyl)phenol Skin Corr. 1C, H314; Eye Dam. 1, H318; Skin Sens. 1B, H317	≥2.5-≤25%
CAS: 2855-13-2 EINECS: 220-666-8 Index number: 612-067-00-9 Reg.nr.: 01-2119514687-32	3-aminomethyl-3,5,5-trimethylcyclohexylamine Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	2.5-10%
CAS: 25513-64-8 EINECS: 247-063-2 Reg.nr.: 01-2119560598-25	3,3,5-trimethylhexamethylene-diamine Skin Corr. 1C, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Sens. 1, H317	0.5-2.5%
CAS: 109-55-7 EINECS: 203-680-9 Index number: 612-061-00-6 Reg.nr.: 01-2119486842-27	3-aminopropyldimethylamine Flam. Liq. 3, H226; Acute Tox. 3, H331; Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317	0.5-2.5%

- **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.

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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.
- **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
- **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:** Protect from frost. Store in dry conditions. Keep container tightly sealed. Recommended storage temperature: 5-30 °C
- **Storage class:** 6.1 C
- **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:**
- **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.
- **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 EN 141

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- 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
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.

- Penetration time of glove material

The determined penetration times according to EN 374 part III 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

Protective goggles and facial protection - Classification according to EN 166

- Body protection:

Protective work clothing
Impervious protective clothing

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties

- General Information

- Appearance:

Form: Fluid
Colour: According to product specification

- Odour: Characteristic

- Odour threshold: Not determined.

- pH-value at 20 °C: 11

- Change in condition

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

- Flash point: 70 °C

- Flammability (solid, gas): Not applicable.

- Decomposition temperature: Not determined.

- Auto-ignition temperature: Product is not selfigniting.

- Explosive properties: Product does not present an explosion hazard.

- Explosion limits:

Lower: Not determined.
Upper: Not determined.

- Density at 20 °C: 1.05 g/cm³

- Relative density: Not determined.

- Vapour density: Not determined.

- Evaporation rate: Not determined.

- Solubility in / Miscibility with water:

Fully miscible.

- Partition coefficient: n-octanol/water: Not determined.

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- Viscosity:	
Dynamic at 20 °C:	1,000 mPas
Kinematic:	Not determined.
- Solvent content:	
VOC (EC)	2.60 %
- 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	No dangerous reactions known.
- 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	Based on available data, the classification criteria are not met.

- LD/LC50 values relevant for classification:

61788-44-1 Phenol, styrenated

Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)

9046-10-0 Polyoxypropylenediamine

Oral	LD50	2,885 mg/kg (rat)
Dermal	LD50	2,980 mg/kg (rabbit)
	LC50	772 mg/l (Oncorhynchus mykiss (Regenbogenforelle)) (96h, Lit.1 (OECD 203))

100-51-6 Benzyl alcohol

Oral	LD50	1,610 mg/kg (rat) (Loeser 1978)
Inhalative	LC50/4 h	4.178 mg/l (rat) (OECD 403)

90-72-2 2,4,6-tris(dimethylaminomethyl)phenol

Oral	LD50	2,169 mg/kg (rat) (OECD 401)
	LC50	84 mg/l (Scenedesmus subspicatus)

2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Oral	LD50	1,030 mg/kg (rat)
Dermal	LD50	1,100 mg/kg (ATE)

25513-64-8 3,3,5-trimethylhexamethylene-diamine

Oral	LD50	500 mg/kg (ATE)
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109-55-7 3-aminopropyldimethylamine

Oral	LD50	410 mg/kg (rat)
Dermal	LD50	490 mg/kg (rat)
Inhalative	LC50/4 h	>4.3 mg/l (rat)

- Primary irritant effect:	
- Skin corrosion/irritation	Causes severe skin burns and eye damage.
- Serious eye damage/irritation	Causes serious eye damage.
- Respiratory or skin sensitisation	May cause an allergic skin reaction.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)	Repr. 2
- 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	Suspected of damaging fertility or the unborn child.
- STOT-single exposure	Based on available data, the classification criteria are not met.
- STOT-repeated exposure	Based on available data, the classification criteria are not met.

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Trade name: **KEMPEROL 022 (B)**- **Aspiration hazard**

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

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SECTION 12: Ecological information

- 12.1 Toxicity

- Aquatic toxicity:

61788-44-1 Phenol, styrenated

LL 50	14.8 mg/l (fish) (96h)
EL50	3.14 mg/l (Scenedesmus subspicatus) (72h)
	1-10 mg/l (Daphnia magna) (48h)

38294-64-3 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5-trimethylcyclohexylamine

LL 50	70.7 mg/l (Oncorhynchus mykiss (Regenbogenforelle)) (96h; OECD 203 stat.test)
EL50	79.4 mg/l (Pseudokirchneriella subcapitata) (72h; stat.test; OECD 201)
	11.1 mg/l (Daphnia magna) (48h, stat.test; OECD 202)
EC50	>1,000 mg/l (Belebtschlamm) (OECD 209)

9046-10-0 Polyoxypropylenediamine

EC50	80 mg/l (Daphnia magna) (48h; OECD 202 static)
EC50	15 mg/l (Pseudokirchneriella subcapitata) (72h; OECD 201 static)

100-51-6 Benzyl alcohol

NOEC	51 mg/kg (Daphnia magna) (OECD 211)
IC50	700 mg/l (ALGAE) (72 h)
LC50/96 h	460 mg/l (Pimephales promelas)
	10 mg/l (Blauer Sonnenbarsch -Lepomis macrochirus)
NOEC	200 mg/l (mouse) (OECD 453)
	400 mg/l (rat) (OECD 453)
EC50	360 mg/l (Daphnia magna) ((48h) Bringmann, Kuehn, 1959)
EC50	770 mg/l (Pseudokirchneriella subcapitata) (OECD 201)
EC50	2,100 mg/l (Belebtschlamm) (OECD 209; 49h)
NOEC	310 mg/l (Pseudokirchneriella subcapitata) (OECD 201)

Reaction mass of 4-tert-butylphenol and 1,3- phenylenedimethanamine and 2-([3-(aminomethyl) benzyl]amino)methyl-4-tert-butylphenol

LL 50	7.9 mg/l (Oncorhynchus mykiss (Regenbogenforelle)) (96h; OECD 203)
EL50	4.94 mg/l (Pseudokirchneriella subcapitata) (72h; OECD 201)
	8.98 mg/l (Daphnia magna) (48h; OECD 202)
EC50	66 mg/l (Belebtschlamm) (3h, OECD 209)

90-72-2 2,4,6-tris(dimethylaminomethyl)phenol

LC50/96 h	175 mg/l (Cyprinus Carpio)
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2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

LC50/96 h	110 mg/l (Brachydanio rerio (Ricefish))
EC50	23 mg/l (daphnia)
	15.2 mg/l (Daphnia magna)
EC50	37 mg/l (Scenedesmus subspicatus)
LC 50	87.6 mg/l (oryzias latipes (Ricefish)) (96h)

25513-64-8 3,3,5-trimethylhexamethylene-diamine

EC50	29.5 mg/l (Scenedesmus subspicatus) (72h)
LC50	174 mg/l (Leuciscus idus melanotus) (72h)

109-55-7 3-aminopropyldimethylamine

LC50/96 h	122 mg/l (Leuciscus idus (Goldorfe))
EC50	56 mg/l (Scenedesmus subspicatus) (72h)
EC50	59.5 mg/l (Daphnia magna) (48h)

- 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.

- Additional ecological information:

- General notes:

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

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- **12.5 Results of PBT and vPvB assessment**
- **PBT:**
- **vPvB:**
- **12.6 Other adverse effects**

Danger to drinking water if even small quantities leak into the ground.
Not applicable.
Not applicable.
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, IMDG, IATA**

UN2735

- **14.2 UN proper shipping name**
- **ADR**
- **IMDG**
- **IATA**

2735 POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Polyoxypropylenediamine, 3-aminopropyldimethylamine), ENVIRONMENTALLY HAZARDOUS
POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Polyoxypropylenediamine, 3-aminopropyldimethylamine), MARINE POLLUTANT
POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Polyoxypropylenediamine, 3-aminopropyldimethylamine)

- **14.3 Transport hazard class(es)**
- **ADR**



- **Class**
- **Label**

8 (C7) Corrosive substances.
8

- **IMDG**



- **Class**
- **Label**

8 Corrosive substances.
8

- **IATA**



- **Class**
- **Label**

8 Corrosive substances.
8

- **14.4 Packing group**
- **ADR, IMDG, IATA**

II

- **14.5 Environmental hazards:**
- **Marine pollutant:**

No
Symbol (fish and tree)
Symbol (fish and tree)

- **Special marking (ADR):**

Warning: Corrosive substances.

- **14.6 Special precautions for user**

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- Danger code (Kemler):	80
- EMS Number:	F-A,S-B
- Segregation groups	Alkalis
- Stowage Category	A
- Segregation Code	SG35 Stow "separated from" acids.
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
- Transport/Additional information:	
- ADR	
- Limited quantities (LQ)	1L
- Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
- Transport category	2
- Tunnel restriction code	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 2735 POLYAMINES, LIQUID, CORROSIVE, N.O.S. (POLYOXYPROPYLENEDIAMINE, 3-AMINOPROPYLDIMETHYLAMINE), 8, II, ENVIRONMENTALLY HAZARDOUS

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** E2 Hazardous to the Aquatic Environment
 - **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t
 - **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
 - **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
 - **National regulations:**
 - **Information about limitation of use:** Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
Employment restrictions concerning women of child-bearing age 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.

- **Relevant phrases** H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful 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

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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. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Corr. 1C: Skin corrosion/irritation – Category 1C
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1A: Skin sensitisation – Category 1A
Skin Sens. 1B: Skin sensitisation – Category 1B
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
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

Internet:
- www.echa.com
- www.baua.de
- www.gestis.itrust.de (IFA: Institute für Occupational Safety and Health of the German Social Accident Insurance)

- Sources

- * Data compared to the previous version altered.