

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 27.05.2015

Version number 1

Revision: 27.05.2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking**- 1.1 Product identifier****- Trade name: ergo 1600****- 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

Adhesives

Hardening agent/ Curing agent

- 1.3 Details of the supplier of the safety data sheet**- Manufacturer/Supplier:**

Kisling AG

Motorenstrasse 102

CH-8620 Wetzikon

Telefon: +41-(0) 58-272 0 272

Telefax: +41-(0) 58-272 0 273

- Further information obtainable from: Safety Department**- Department issuing MSDS:** ergo@kisling.com**- 1.4 Emergency telephone number:** Swiss Toxicological Information Centre: +41-(0) 44-2 51 51 51**SECTION 2: Hazards identification****- 2.1 Classification of the substance or mixture****- Classification according to Regulation (EC) No 1272/2008**

Org. Perox. EF H242 Heating may cause a fire.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Dam. 1 H318 Causes serious eye damage.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

- Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xi; Irritant

R36/38: Irritating to eyes and skin.

Xi; Sensitising

R43: May cause sensitisation by skin contact.

O; Oxidising

R7: May cause fire.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- 2.2 Label elements**- Labelling according to Regulation (EC) No 1272/2008**

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

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- Hazard pictograms

GHS02 GHS05 GHS07 GHS09

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

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700)
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane
dibenzoyl peroxide

- Hazard statements

H242 Heating may cause a fire.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H411 Toxic to aquatic life with long lasting effects.

- Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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.
P410 Protect from sunlight.
P411+P235 Store at temperatures not exceeding 25°C. Keep cool.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Additional information:

EUH205 Contains epoxy constituents. May produce an allergic reaction.

- 2.3 Other hazards**- Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Mixtures

- **Description:** Mixture of substances listed below with nonhazardous additions.

- Dangerous components:

CAS: 25068-38-6 NLP: 500-033-5 Index number: 603-074-00-8 Reg.nr.: 01-2119456619-26-xxxx	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700) Xi R36/38; Xi R43; N R51/53 ----- Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	25-<100%
CAS: 94-36-0 EINECS: 202-327-6 Index number: 617-008-00-0 Reg.nr.: 01-2119511472-50-xxxx	dibenzoyl peroxide Xi R36; Xi R43; E R3; O R7; N R50/53 ----- Org. Perox. B, H241; Eye Irrit. 2, H319; Skin Sens. 1, H317	20-<25%
CAS: 2530-83-8 EINECS: 219-784-2 Reg.nr.: 01-2119513212-58-xxxx	[3-(2,3-epoxypropoxy)propyl]trimethoxysilane Xi R41 ----- Eye Dam. 1, H318	3-<5%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

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SECTION 4: First aid measures

- 4.1 Description of first aid measures

- General information:

Immediately remove any clothing soiled by the product.
Drying on clothing or other combustible materials may cause fire.

- 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:

After contact with skin, wash immediately with plenty of soap and water.
If skin irritation continues, consult a doctor.

- After eye contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

- After swallowing:

Rinse out mouth and then drink plenty of water.
If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

- 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:** 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:

Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.

- 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

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Particular danger of slipping on leaked/spilled product.
Keep away from ignition sources.

- 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.

- 6.3 Methods and material for containment and cleaning up:

Never use saw-dust or other flammable substances.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Never replace spilled product into original containers (danger of decomposition).
Dispose of the material collected according to regulations.
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 10 for information on "stability and reactivity".

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See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling

- Ensure good ventilation/exhaustion at the workplace.
- Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
- Keep receptacles tightly sealed.

- Information about fire - and explosion protection:

- The product may cause fire due to release of oxygen. May be explosive, when combined with flammable substances.
- Violent release of gases on decomposition.

- 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 flammable substances.
- Store away from foodstuffs.

- Further information about storage conditions:

- Store in cool, dry conditions in well sealed receptacles.
- Protect from heat and direct sunlight.
- Store receptacle in a well ventilated area.

- Maximum storage temperature: 25 °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:

94-36-0 dibenzoyl peroxide

MAK (Switzerland)	Short-term value: 5 e mg/m ³
	Long-term value: 5 e mg/m ³

- DNELs

94-36-0 dibenzoyl peroxide

Dermal	Langzeit, Systemische Effekte	6,6 mg/kg bw/day (all)
Inhalative	Langzeit, Systemische Effekte	11,75 mg/m ³ (all)

- PNECs

94-36-0 dibenzoyl peroxide

Oral	PNEC Oral	6,67 mg/kg Food (all)
	PNEC Boden	0,0758 mg/kg Boden (all)
	PNEC Kläranlage	0,35 mg/l (all)
	PNEC Meerwasser	0,0000602 mg/l (all)
	PNEC Meerwassersediment	0,0338 mg/kg Sediment (all)
	PNEC Süßwasser	0,000602 mg/l (all)
	PNEC Süßwassersediment	0,338 mg/kg Sediment (all)

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

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- 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.

Clean skin thoroughly immediately after handling the product.

- Respiratory protection:

Use suitable respiratory protective device in case of insufficient ventilation.

filter A (EN 141)

- Protection of hands:

Protective gloves (EN 374)

Check protective gloves prior to each use for their proper condition.

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

- Material of gloves

Find below a list of appropriate protective gloves for chemical surrounding:

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Permeation time / penetration time: = 60 minutes(DIN EN 374):

Nitril I, Nr. 0730, 0732, 0733, 0736, 0737, 0738, 0739 oder 0836

of KCL company (e-mail: vertrieb@kcl.de).

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The recommendation is based exclusively on the chemical compatibility and the test according to EN374 under laboratory conditions.

Requirements can vary according to the use. Therefore, please always take into account the glove supplier's recommendations.

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

Permeation time / penetration time: see above (material of gloves)

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection: Safety glasses**SECTION 9: Physical and chemical properties****- 9.1 Information on basic physical and chemical properties****- General Information****- Appearance:**

Form: Viscous

Colour: White

- Odour: Characteristic

- Odour threshold: Not determined.

- pH-value: Not determined.

- Change in condition

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

- Flash point: Not applicable.

- Flammability (solid, gaseous): Not applicable.

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- Ignition temperature:	
Decomposition temperature:	SADT: 50 °C
- Self-igniting:	Product is not self-igniting.
- Danger of explosion:	Not determined.
- Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
- Vapour pressure:	Not determined.
- Density at 20 °C:	1,12 - 1,15 g/cm ³
- Relative density	Not determined.
- Vapour density	Not determined.
- Evaporation rate	Not determined.
- Solubility in / Miscibility with water:	Not miscible or difficult to mix.
- Partition coefficient (n-octanol/water):	Not determined.
- Viscosity:	
Dynamic at 20 °C:	15000 mPas
Kinematic:	Not determined.
- 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity

- 10.2 Chemical stability

- Thermal decomposition / conditions to be avoided:

Protect from heat and direct sunlight.

Drying on clothing or other combustible materials may cause fire.

Incompatible with contaminations of any kind, especially with heavy metal ions, alkalis (vigorous decomposition) and combustible materials (danger of combustion) and reducing agents. Self accelerating exothermic decomposition with contaminations and when heated. Evolution of oxygen.

SADT: 50 °C

- 10.3 Possibility of hazardous reactions

Reacts with amines.

Reacts with strong acids.

- 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 products of decomposition if used and stored according to specifications.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects

- Acute toxicity

- Primary irritant effect:

- **Skin corrosion/irritation** Irritant to skin and mucous membranes.

- **Serious eye damage/irritation** Irritating effect.

- **Respiratory or skin sensitisation** Sensitisation possible through skin contact.

- Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

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Irritant

No experimentally found toxicological data are available for this preparation.


SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **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:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Danger to drinking water if even small quantities leak into the ground.
Do not allow product to reach ground water, water course or undiluted sewage system.
Also very poisonous for fish and plankton in water bodies.
Very toxic for 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** Disposal must be made according to official regulations.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---|---|
| - 14.1 UN-Number | |
| - ADR, IMDG, IATA | UN3108 |
| - 14.2 UN proper shipping name | |
| - ADR | 3108 ORGANIC PEROXIDE TYPE E, SOLID (dibenzoyl peroxide), ENVIRONMENTALLY HAZARDOUS |
| - IMDG | ORGANIC PEROXIDE TYPE E, SOLID (dibenzoyl peroxide), MARINE POLLUTANT |
| - IATA | ORGANIC PEROXIDE TYPE E, SOLID (dibenzoyl peroxide) |
| - 14.3 Transport hazard class(es) | |
| - ADR | |
|  | |
| - Class | 5.2 (P1) Organic peroxides. |

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- Label 5.2

- IMDG



- Class 5.2 Organic peroxides.

- Label 5.2

- IATA



- Class 5.2 Organic peroxides.

- Label 5.2

- 14.4 Packing group

- ADR, IMDG, IATA Void

- 14.5 Environmental hazards:

- Marine pollutant: Yes
Symbol (fish and tree)

- Special marking (ADR): Symbol (fish and tree)

- 14.6 Special precautions for user Warning: Organic peroxides.

- Danger code (Kemler): 52

- EMS Number: F-J,S-R

- Segregation groups Peroxides

- 14.7 Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code Not applicable.

- Transport/Additional information:

- ADR

- Limited quantities (LQ) 500 g

- Transport category 2

- Tunnel restriction code D

- UN "Model Regulation": UN3108, ORGANIC PEROXIDE TYPE E, SOLID
(dibenzoyl peroxide), 5.2, ENVIRONMENTALLY
HAZARDOUS

SECTION 15: Regulatory information

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

- National regulations:

- Waterhazard class: Water hazard class 2 (Self-assessment): hazardous for water.

- 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

H241 Heating may cause a fire or explosion.

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- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H411 Toxic to aquatic life with long lasting effects.
- R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- R36 Irritating to eyes.
- R36/38 Irritating to eyes and skin.
- R41 Risk of serious damage to eyes.
- R43 May cause sensitisation by skin contact.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R7 May cause fire.

- 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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

Org. Perox. B: Organic Peroxides, Type B

Org. Perox. EF: Organic Peroxides, Types E, F

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

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

- 1.1 Product identifier

- Trade name: ergo 1629

- 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

Adhesives

Resin

- 1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:

Kisling AG

Motorenstrasse 102

CH-8620 Wetzikon

Telefon: +41-(0) 58-272 0 272

Telefax: +41-(0) 58-272 0 273

- Further information obtainable from: Safety Department

- Department issuing MSDS: ergo@kisling.com

- 1.4 Emergency telephone number: Swiss Toxicological Information Centre: +41-(0) 44-2 51 51 51

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.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Dam. 1 H318 Causes serious eye damage.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

- Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

Xi; Sensitising

R43: May cause sensitisation by skin contact.

R10: Flammable.

- Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- 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



GHS05



GHS07

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

n-butyl methacrylate

methacrylic acid

methyl methacrylate

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700)**- Hazard statements**

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

- Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Additional information:

EUH205 Contains epoxy constituents. May produce an allergic reaction.

- 2.3 Other hazards**- Results of PBT and vPvB assessment****- PBT:** Not applicable.**- vPvB:** Not applicable.**SECTION 3: Composition/information on ingredients****- 3.2 Mixtures****- Description:** Mixture of substances listed below with nonhazardous additions.**- Dangerous components:**

CAS: 97-88-1 EINECS: 202-615-1 Index number: 607-033-00-5	n-butyl methacrylate Xi R36/37/38; Xi R43 R10 Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	25-<100%
CAS: 80-62-6 EINECS: 201-297-1 Index number: 607-035-00-6 Reg.nr.: 01-2119452498-28-xxxx	methyl methacrylate Xi R37/38; Xi R43; F R11 Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	25-<100%
CAS: 52628-03-2 EINECS: 258-053-2	2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, phosphate Xi R36/37/38 Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	3-<10%

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CAS: 79-41-4 EINECS: 201-204-4 Index number: 607-088-00-5 Reg.nr.: 01-2119463884-26-xxxx	methacrylic acid C R35; Xn R21/22 ----- Acute Tox. 3, H311; Skin Corr. 1A, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H332	3-<5%
CAS: 25068-38-6 NLP: 500-033-5 Index number: 603-074-00-8 Reg.nr.: 01-2119456619-26-xxxx	reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700) Xi R36/38; Xi R43; N R51/53 ----- Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	1-<2,5%
CAS: 99-97-8 EINECS: 202-805-4 Index number: 612-056-00-9	N,N-dimethyl-p-toluidine T R23/24/25 R33-52/53 ----- Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 2, H330; STOT RE 2, H373; Aquatic Chronic 3, H412	0,3-<1%

- **Additional information:** For the wording of the listed risk 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.

- 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:

After contact with skin, wash immediately with plenty of soap and water.

If skin irritation continues, consult a doctor.

- After eye contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

- After swallowing:

Rinse out mouth and then drink plenty of water.

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

- 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.

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

- 5.2 Special hazards arising from the substance or mixture

Can form explosive gas-air mixtures.

Formation of toxic gases is possible during heating or in case of fire.

- 5.3 Advice for firefighters

- Protective equipment:

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

- Additional information

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources.

Use respiratory protective device against the effects of fumes/dust/aerosol.

- 6.2 Environmental precautions:

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow product to reach sewage system or any water course.

- 6.3 Methods and material for containment and cleaning up:

Ensure adequate ventilation.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of the material collected according to regulations.

- 6.4 Reference to other sections

Fumes can combine with air to form an explosive mixture.

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 10 for information on "stability and reactivity".

See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

- Information about fire - and explosion protection:

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.

- **Information about storage in one common storage facility:** Store away from foodstuffs.

- Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Store receptacle in a well ventilated area.

- **Maximum storage temperature:** 20 °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:

80-62-6 methyl methacrylate

MAK (Switzerland) Short-term value: 420 mg/m³, 100 ppm

Long-term value: 210 mg/m³, 50 ppm

S SSc;

79-41-4 methacrylic acid

MAK (Switzerland) Short-term value: 36 mg/m³, 10 ppm

Long-term value: 18 mg/m³, 5 ppm

SSc;

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- **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.

Clean skin thoroughly immediately after handling the product.

- **Respiratory protection:**

Use suitable respiratory protective device in case of insufficient ventilation.

filter A (EN 141)

- **Protection of hands:**

Protective gloves (EN 374)

Check protective gloves prior to each use for their proper condition.

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

- **Material of gloves**

Find below a list of appropriate protective gloves for chemical surrounding:

Permeation time / penetration time: = 60 minutes(DIN EN 374):

Nitril I, Nr. 0730, 0732, 0733, 0736, 0737, 0738, 0739 oder 0836

of KCL company (e-mail: vertrieb@kcl.de).

The recommendation is based exclusively on the chemical compatibility and the test according to EN374 under laboratory conditions.

Requirements can vary according to the use. Therefore, please always take into account the glove supplier's recommendations.

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**

Permeation time / penetration time: see above (material of gloves)

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Safety glasses

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form: Viscous

Colour: Light yellow

- **Odour:** Characteristic

- **Odour threshold:** Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

- **Flash point:** 23,5 °C

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- Flammability (solid, gaseous):	Not applicable.
- Ignition temperature:	
- Decomposition temperature:	Not determined.
- Self-igniting:	Product is not self-igniting.
- Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
- Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
- Vapour pressure:	Not determined.
- Density at 20 °C:	1 g/cm ³
- Relative density	Not determined.
- Vapour density	Not determined.
- Evaporation rate	Not determined.
- Solubility in / Miscibility with water:	Not miscible or difficult to mix.
- Partition coefficient (n-octanol/water):	Not determined.
- Viscosity:	
Dynamic at 20 °C:	100 000-120 000 mPas
Kinematic:	Not determined.
- 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
Protect from heat and direct sunlight.
- **10.3 Possibility of hazardous reactions**
Forms explosive gas mixture with air.
Reacts with peroxides.
Reacts with strong oxidising agents.
Reacts with strong acids and alkali.
- **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 products of decomposition if used and stored according to specifications.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**

- LD/LC50 values relevant for classification:		
97-88-1 n-butyl methacrylate		
Inhalative	LC50/4 h => LC50/4	4910 mg/l (rat)
80-62-6 methyl methacrylate		
Oral	LD50	7872 mg/kg (rat)

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Dermal	LD50	>5,000 mg/kg (rab)
Inhalative	LC50/4 h	78 000 mg/l (rat)
79-41-4 methacrylic acid		
Oral	LD50	1,320 - 2,260 mg/kg (rat)
Dermal	LD50	500 - 1,000 mg/kg (rab)
Inhalative	LC50/4 h	7,100 mg/l (rat)

- Primary irritant effect:**- Skin corrosion/irritation** Irritant to skin and mucous membranes.**- Serious eye damage/irritation** Irritating effect.**- Respiratory or skin sensitisation** Sensitisation possible through skin contact.**- Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Irritant

No experimentally found toxicological data are available for this preparation.

SECTION 12: Ecological information**- 12.1 Toxicity****- Aquatic toxicity:****80-62-6 methyl methacrylate**

EC50/48 h | 69 mg/l (DA)

- 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 danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

- 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** Disposal must be made according to official regulations.**- Uncleaned packaging:****- Recommendation:** Disposal must be made according to official regulations.**SECTION 14: Transport information****- 14.1 UN-Number****- ADR, IMDG, IATA**

UN1133

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

1133 ADHESIVES

- IMDG, IATA

ADHESIVES

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- 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: Not applicable.

- 14.6 Special precautions for user Warning: Flammable liquids.

- Danger code (Kemler): 30

- EMS Number: F-E,S-D

- 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

- Transport/Additional information:**- ADR**

- Limited quantities (LQ) 5L
 - Transport category 3
 - Tunnel restriction code D/E

- UN "Model Regulation": UN1133, ADHESIVES, 3, III

SECTION 15: Regulatory information

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

- National regulations:

- Waterhazard class: Water danger class 3 (Self-assessment): extremely hazardous for water.

- 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

H225 Highly flammable liquid and vapour.
 H226 Flammable liquid and vapour.
 H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H311 Toxic in contact with skin.
 H314 Causes severe skin burns and eye damage.

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- H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H330 Fatal if inhaled.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H411 Toxic to aquatic life with long lasting effects.
 H412 Harmful to aquatic life with long lasting effects.
- R10 Flammable.
 R11 Highly flammable.
 R21/22 Harmful in contact with skin and if swallowed.
 R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
 R33 Danger of cumulative effects.
 R35 Causes severe burns.
 R36/37/38 Irritating to eyes, respiratory system and skin.
 R36/38 Irritating to eyes and skin.
 R37/38 Irritating to respiratory system and skin.
 R43 May cause sensitisation by skin contact.
 R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- 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)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 Flam. Liq. 2: Flammable liquids, Hazard Category 2
 Flam. Liq. 3: Flammable liquids, Hazard Category 3
 Acute Tox. 4: Acute toxicity, Hazard Category 4
 Acute Tox. 3: Acute toxicity, Hazard Category 3
 Acute Tox. 2: Acute toxicity, Hazard Category 2
 Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
 Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
 Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
 Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
 STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
 Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2
 Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

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