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

Printing date 27.04.2022 Version number 8 Revision: 27.04.2022

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

· **1.1 Product identifier**

· **Trade name:** **Technovit 4000 Powder**

· **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** Resin for metallographic testing

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Kulzer GmbH
Leipziger Straße 2, 63450 Hanau (Germany)
Tel.: +49 (0)6181 9689-2570 (Wehrheim)

· **Informing department:** email: technik.wehrheim@kulzer-dental.com
· **1.4 Emergency telephone number:** Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

Skin Sens. 1	H317 May cause an allergic skin reaction.
STOT RE 1	H372 Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.
Aquatic Chronic 2	H411 Toxic to aquatic life with long lasting effects.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.
· **Hazard pictograms**

GHS07 GHS08 GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Quartz (SiO2)
dibenzoyl peroxide
· **Hazard statements**
H317 May cause an allergic skin reaction.
H372 Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.
H411 Toxic to aquatic life with long lasting effects.
· **Precautionary statements**
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
· **2.3 Other hazards** -
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.

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· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**
· **Description: -**

· **Dangerous components:**

CAS: 14808-60-7 EINECS: 238-878-4	Quartz (SiO2) STOT RE 1, H372	>90%
CAS: 94-36-0 EINECS: 202-327-6 Reg.nr.: 01-2119511472-50-xxxx	dibenzoyl peroxide Self-react. B, H241; Org. Perox. B, H241 Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10) Eye Irrit. 2, H319; Skin Sens. 1, H317	≥1-<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**
Take affected persons into the open air.
Personal protection for the First Aider.
· **After inhalation**
Supply fresh air; consult doctor in case of symptoms.
In case of unconsciousness bring patient into stable side position for transport.
· **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
· **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
Remove contact lenses, if present and easy to do. Continue rinsing.
· **After swallowing**
Rinse out mouth and then drink plenty of water.
In case of persistent symptoms consult doctor.
· **4.2 Most important symptoms and effects, both acute and delayed**
Allergic reactions
Breathing difficulty
Coughing
· **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, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
· **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
· **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Can be released in case of fire
Carbon dioxide (CO2)
Carbon monoxide (CO)

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· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained breathing apparatus.
(EN 133)
· **Additional information** Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid contact with eyes and skin.
Ensure adequate ventilation
Wear protective equipment. Keep unprotected persons away.
Avoid causing dust.
· **6.2 Environmental precautions:**
Do not allow to enter the ground/soil.
Damp down dust with water spray jet.
Do not allow to enter drainage system, surface or ground water.
· **6.3 Methods and material for containment and cleaning up:**
Send for recovery or disposal in suitable containers.
Collect mechanically.
· **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 information on disposal.
-

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Carry out filling operations only at sites with extractors available.
Avoid contact with eyes and skin.
Provide suction extractors if dust is formed.
Any deposit of dust which cannot be avoided must be removed regularly.
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:** Protect from heat.

· **Handling**
do not mix with
Strong bases
Strong acids
organic peroxides
Strong oxidizers
reducing agent

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and containers:**
Store in cool, dry place in tightly closed containers.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Store container in a well ventilated position.
· **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**

· **Components with critical values that require monitoring at the workplace:**	
14808-60-7 Quartz (SiO2)	
AGW (European Union)	Long-term value: 0.1 mg/m³
BOELV (European Union)	Long-term value: 0.1* mg/m³ *respirable fraction
94-36-0 dibenzoyl peroxide	
WEL (Great Britain)	Long-term value: 5 mg/m³

· **DNELs**		
94-36-0 dibenzoyl peroxide		
Oral	general population, long term, systemic	2 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	13.3 mg/Kg/d (not defined)
Inhalative	worker industrial, long term, systemic	39 mg/m3 (not defined)

· **PNECs**	
94-36-0 dibenzoyl peroxide	
freshwater	0.00002 mg/l (not defined)
marine water	0.000002 mg/l (not defined)
sewage treatment plant	0.35 mg/l (not defined)
sediment, dry weight, freshwater	0.013 mg/Kg (not defined)
sediment, dry weight, marine water	0.001 mg/Kg (not defined)
soil, dry weight	0.003 mg/Kg (not defined)

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
Do not inhale dust / smoke / mist.

· **Breathing equipment:**
Use a mask with particle filter in case of dust generation.
Filter P2.

· **Hand protection**
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
chemical protection gloves are suitable, which are tested according to EN 374
If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.
Check protective gloves prior to each use for their proper condition.

· **Material of gloves**
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.
NBR: acrylonitrile-butadiene rubber (0,11 mm)

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· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
>30 min
· **Eye/face protection** eye protection (EN 166)
· **Body protection:** Light weight protective clothing
· **Environmental exposure controls**
Do not allow to enter drainage system, surface or ground water.

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SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**
· **General Information**

· **Physical state**	Solid.
· **Colour:**	Cream coloured
· **Smell:**	Odourless
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	Not determined
· **Boiling point or initial boiling point and boiling range**	Not determined components: no information available
· **Flammability**	Not applicable.
· **Lower and upper explosion limit**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Flash point:**	Not applicable
· **Decomposition temperature:**	Not determined.
· **SADT**	
· **pH**	Not determined. Not applicable.
· **Viscosity:**	
· **Kinematic viscosity**	Not determined. Not applicable.
· **dynamic:**	Not determined. Not applicable.
· **Solubility**	
· **Water:**	Not miscible or difficult to mix
· **Partition coefficient n-octanol/water (log value)**	Not determined.
· **Steam pressure:**	Not determined. Not applicable.
· **Density and/or relative density**	
· **Density at 20 °C**	2.50317 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.

· **9.2 Other information** No further relevant information available.
· **Appearance:**
· **Form:** Powder
· **Important information on protection of health and environment, and on safety.**
· **Self-inflammability:** Product is not selfigniting.
· **Explosive properties:** Product is not explosive.

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· **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**	Void
· **Flammable solids**	Void
· **Self-reactive substances and mixtures**	Void
· **Pyrophoric liquids**	Void
· **Pyrophoric solids**	Void
· **Self-heating substances and mixtures**	Void
· **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**
· **Conditions to be avoided:** No decomposition if used and stored according to specifications.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known
· **10.4 Conditions to avoid** Heat, flames and sparks.
· **10.5 Incompatible materials:**
Strong bases
Strong acids
Strong oxidizers
reducing agent
organic peroxides
· **10.6 Hazardous decomposition products:** None
· **Additional information:** -

*

SECTION 11: Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**		
94-36-0 dibenzoyl peroxide		
Oral	LD0	>2,000 mg/kg (mouse) (OECD 401)
Inhalative	LC0/4h	24.3 ppm (rat) (OECD 403)

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
· **Respiratory or skin sensitisation**
May cause an allergic skin reaction.

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· **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** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure**
Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **11.2 Information on other hazards**
· **Endocrine disrupting properties**
Taking into account the current state of scientific knowledge, no data on endocrine disrupting properties of the product are available.

None of the ingredients is listed.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
94-36-0 dibenzoyl peroxide	
EC50/72h	0.042 mg/l (algae) (OECD 201)
EC50/48h	0.11 mg/l (daphnia) (OECD 202)
LC50/96h	0.06 mg/l (fish) (OECD 203)
ErC50 / 72 h	0.071 mg/l (algae) (OECD 201)
NOEC / 72h	0.02 mg/l (algae) (OECD 201)
NOEC / 96h	0.032 mg/l (fish) (OECD 203)
NOEC / 48h	0.076 mg/l (daphnia) (OECD 202)
ErC10	0.001 mg/L /21d (daphnia) (OECD 211)

· **12.2 Persistence and degradability**	
94-36-0 dibenzoyl peroxide	
Biodegradation	71 % /28d (not defined) (OECD 301D)

· **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**
For information on endocrine disrupting properties see section 11.
· **12.7 Other adverse effects**
· **Remark:** Harmful to fish
· **Additional ecological information:**
· **General notes:**
Harmful to aquatic organisms
Avoid transfer into the environment.
Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.

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SECTION 13: Disposal considerations

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

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN number or ID number**	
· **ADR, IMDG, IATA**	UN3077
· **14.2 UN proper shipping name**	
· **ADR**	3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (dibenzoyl peroxide)
· **IMDG**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (dibenzoyl peroxide), MARINE POLLUTANT
· **IATA**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (dibenzoyl peroxide)
· **14.3 Transport hazard class(es)**	
· **ADR**	
	
· **Class**	9 (M7) Miscellaneous dangerous substances and articles.
· **Label**	9
· **IMDG, IATA**	
	
· **Class**	9 Miscellaneous dangerous substances and articles.
· **Label**	9
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	III
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No Symbol (fish and tree)
· **Special marking (ADR):**	Symbol (fish and tree)

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· **Special marking (IATA):**	Symbol (fish and tree)
· **14.6 Special precautions for user**	Warning: Miscellaneous dangerous substances and articles.
· **Kemler Number:**	90
· **EMS Number:**	F-A,S-F
· **Stowage Category**	A
· **Stowage Code**	SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.
· **14.7 Maritime transport in bulk according to IMO instruments**	Not applicable.
· **Transport/Additional information:**	-
· **ADR**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **Transport category**	3
· **Tunnel restriction code**	(-)
· **IMDG**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· **UN "Model Regulation":**	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DIBENZOYL PEROXIDE), 9, 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** 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

· **Information about limitation of use:**
Employment restrictions concerning young persons must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.

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

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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· **Relevant phrases**
H241 Heating may cause a fire or explosion.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**
SADT: Self Accelerating Decomposition Temperature
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 (GB REACH)
PNEC: Predicted No-Effect Concentration (GB REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Self-react. B: Self-reactive substances and mixtures – Type B
Org. Perox. B: Organic peroxides – Type B
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

· **Sources**
(EC) 1272/2008: classification, labelling and packaging of substances and mixtures
(EC) 1907/2006: GB REACH
ADR/RID/ADN - IDMG - IATA: transport of dangerous goods by road, rail, inland waterway, with maritime vessels and for the air transport

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

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

· **1.1 Product identifier**

· **Trade name:** **Technovit 4000 syrup 1**

· **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** Resin for metallographic testing

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

· **Manufacturer/Supplier:**
Kulzer GmbH
Leipziger Straße 2, 63450 Hanau (Germany)
Tel.: +49 (0)6181 9689-2570 (Wehrheim)

· **Informing department:** email: technik.wehrheim@kulzer-dental.com

· **1.4 Emergency telephone number:** Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

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 Irrit. 2	H319	Causes serious eye irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Repr. 2	H361d	Suspected of damaging the unborn child.
STOT RE 1	H372	Causes damage to the hearing organs through prolonged or repeated exposure.

· **2.2 Label elements**

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

· **Hazard pictograms**

GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**
styrene
methyl methacrylate

· **Hazard statements**
H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H361d Suspected of damaging the unborn child.
H372 Causes damage to the hearing organs through prolonged or repeated exposure.

· **Precautionary statements**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P405 Store locked up.

· **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:** Product based on methacrylates

· **Dangerous components:**

CAS: 100-42-5 EINECS: 202-851-5 Reg.nr.: 01-2119457861-32-xxxx	styrene Flam. Liq. 3, H226 Repr. 2, H361d; STOT RE 1, H372 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319 ATE: LC50/4 h inhalative: 11.8 mg/l	≥25-≤50%
CAS: 80-62-6 EINECS: 201-297-1 Reg.nr.: 01-2119452498-28-xxxx	methyl methacrylate Flam. Liq. 2, H225 Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	≥2.5-<10%
CAS: 123-31-9 EINECS: 204-617-8 Reg.nr.: 01-2119524016-51-xxxx	1,4-dihydrxybenzene Muta. 2, H341; Carc. 2, H351 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Acute Tox. 4, H302; Skin Sens. 1, H317 ATE: LD50 oral: 375 mg/kg	≥0.025-<0.1%

· **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**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Take affected persons out of danger area and instruct to lie down.
Personal protection for the First Aider.
· **After inhalation**
Supply fresh air; consult doctor in case of symptoms.
In case of unconsciousness bring patient into stable side position for transport.
· **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
· **After eye contact**
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
Remove contact lenses, if present and easy to do. Continue rinsing.
· **After swallowing**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; instantly call for medical help.

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· **4.2 Most important symptoms and effects, both acute and delayed** Allergic reactions
· **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**
CO_2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
· **For safety reasons unsuitable extinguishing agents** Water with a full water 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.
Can be released in case of fire
Carbon dioxide (CO_2)
Carbon monoxide (CO)
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained breathing apparatus.
(EN 133)
· **Additional information** -

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Avoid contact with eyes and skin.
Ensure adequate ventilation
Keep away from ignition sources
· **6.2 Environmental precautions:**
Do not allow to enter drainage system, surface or ground water.
Keep dirty washing water for appropriate disposal.
· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
Send for recovery or disposal in suitable containers.
· **6.4 Reference to other sections**
See Section 13 for information on disposal.
See Section 8 for information on personal protection equipment.
-

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Keep containers tightly sealed.
Prevent formation of aerosols.
Avoid contact with eyes and skin.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Fumes can combine with air to form an explosive mixture.
Do not spray on flames or red-hot objects.
Protect against electrostatic charges.

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· **Handling**
do not mix with
Strong oxidizers

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and containers:**
Store in cool, dry place in tightly closed containers.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Components with critical values that require monitoring at the workplace:**	
100-42-5 styrene	
WEL (Great Britain)	Short-term value: 1080 mg/m³, 250 ppm Long-term value: 430 mg/m³, 100 ppm
80-62-6 methyl methacrylate	
WEL (Great Britain)	Short-term value: 416 mg/m³, 100 ppm Long-term value: 208 mg/m³, 50 ppm
IOELV (European Union)	Short-term value: 100 ppm Long-term value: 50 ppm
123-31-9 1,4-dihydrxybenzene	
WEL (Great Britain)	Long-term value: 0.5 mg/m³

· **DNELs**		
100-42-5 styrene		
Oral	general population, long term, systemic	2.1 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	406 mg/Kg/d (not defined)
	general population, long term, systemic	343 mg/Kg/d (not defined)
Inhalative	worker industrial, acute, systemic	289 mg/m3 (not defined)
	worker industrial, long term, systemic	85 mg/m3 (not defined)
	worker industrial, long term, local	306 mg/m3 (not defined)
	general population, acute, systemic	174.25 mg/m3 (not defined)
	general population, long term, systemic	10.2 mg/m3 (not defined)
	general population, long term, local	182.75 mg/m3 (not defined)
80-62-6 methyl methacrylate		
Oral	general population, long term, systemic	8.2 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	13.67 mg/Kg/d (not defined)
	general population, long term, systemic	8.2 mg/Kg/d (not defined)
Inhalative	worker industrial, acute, local	416 mg/m3 (not defined)
	worker industrial, long term, systemic	348.4 mg/m3 (not defined)
	worker industrial, long term, local	208 mg/m3 (not defined)
	general population, acute, local	208 mg/m3 (not defined)
	general population, long term, systemic	74.3 mg/m3 (not defined)

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123-31-9 1,4-dihydrxybenzene		
Oral	general population, long term, systemic	0.6 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	3.33 mg/Kg/d (not defined)
	general population, long term, systemic	1.66 mg/Kg/d (not defined)
Inhalative	worker industrial, long term, systemic	2.1 mg/m3 (not defined)
	general population, long term, systemic	1.05 mg/m3 (not defined)

· **PNECs**

100-42-5 styrene	
freshwater	0.028 mg/l (not defined)
marine water	0.014 mg/l (not defined)
sewage treatment plant	5 mg/l (not defined)
sediment, dry weight, freshwater	0.614 mg/Kg (not defined)
sediment, dry weight, marine water	0.307 mg/Kg (not defined)
soil, dry weight	0.2 mg/Kg (not defined)
80-62-6 methyl methacrylate	
freshwater	0.94 mg/l (not defined)
marine water	0.094 mg/l (not defined)
sewage treatment plant	10 mg/l (not defined)
sediment, dry weight, freshwater	10.2 mg/Kg (not defined)
sediment, dry weight, marine water	0.102 mg/Kg (not defined)
soil, dry weight	1.48 mg/Kg (not defined)
123-31-9 1,4-dihydrxybenzene	
freshwater	0.00057 mg/l (not defined)
marine water	0.000057 mg/l (not defined)
sewage treatment plant	0.71 mg/l (not defined)
sediment, dry weight, freshwater	0.0049 mg/Kg (not defined)
sediment, dry weight, marine water	0.00049 mg/Kg (not defined)
soil, dry weight	0.00064 mg/Kg (not defined)

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**
· **Appropriate engineering controls** No further data; see item 7.
· **Individual protection measures, such as personal protective equipment**
· **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
Use breathing protection in case of insufficient ventilation.
Filter A.
· **Hand protection**
If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.
Solvent resistant gloves

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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**
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.
Fluorocarbon rubber (Viton)
>0,4 mm

· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection** *eye protection (EN 166)*
· **Body protection:** *Light weight protective clothing*

· **Environmental exposure controls**
Do not allow to enter drainage system, surface or ground water.

*

SECTION 9: Physical and chemical properties

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

· **General Information**

· **Physical state**	*Fluid*
· **Colour:**	*Yellow*
· **Smell:**	*Aromatic*
· **Odour threshold:**	*Not determined.*
· **Melting point/freezing point:**	*Not determined*
· **Boiling point or initial boiling point and boiling range**	*145 °C*
· **Flammability**	*Not applicable.*
· **Lower and upper explosion limit**	
· **Lower:**	*1.2 Vol %*
· **Upper:**	*8.9 Vol %*
· **Flash point:**	*31 °C (100-42-5 styrene)*
· **Ignition temperature:**	*490 °C*
· **Decomposition temperature:**	*Not determined.*
· **SADT**	
· **pH**	*Not determined.*
· **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.*
· **Steam pressure at 20 °C:**	*37.8 hPa*
· **Density and/or relative density**	
· **Density at 20 °C**	*1.1 g/cm³*
· **Relative density**	*Not determined.*
· **Vapour density**	*Not determined.*

· **9.2 Other information** *No further relevant information available.*

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· **Appearance:**	
· **Form:**	Fluid
· **Important information on protection of health and environment, and on safety.**	
· **Self-inflammability:**	Product is not selfigniting.
· **Explosive properties:**	Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
· **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
· **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**
· **Conditions to be avoided:** No decomposition if used and stored 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:** Strong oxidizers
· **10.6 Hazardous decomposition products:** None

SECTION 11: Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**		
100-42-5 styrene		
Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
Inhalative	LC50/4 h	11.8 mg/l (ATE)

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		11.8 mg/l (rat)
80-62-6 methyl methacrylate		
Oral	LD50	~7,900 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (guinea pig) (OECD 402)
Inhalative	LC50/4 h	29.8 mg/l (rat)
123-31-9 1,4-dihydrxybenzene		
Oral	LD50	375 mg/kg (ATE)
		>375 mg/kg (rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (rabbit) (OECD 402)

· **Skin corrosion/irritation**
Causes skin irritation.
· **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**
Suspected of damaging the unborn child.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure**
Causes damage to the hearing organs through prolonged or repeated exposure.
· **Aspiration hazard** Based on available data, the classification criteria are not met.
· **Additional toxicological information:**
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Repr. 2

· **11.2 Information on other hazards**
· **Endocrine disrupting properties**
Taking into account the current state of scientific knowledge, no data on endocrine disrupting properties of the product are available.

None of the ingredients is listed.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**	
100-42-5 styrene	
EL50/48h	4.7 mg/L (daphnia) (OECD 202)
LC50/96h	10 mg/l (fish) (OECD 203)
ErC50 / 72 h	4.9 mg/l (algae) (EPA OTS 797.1050)
NOEC / 48h	1.9 mg/l (daphnia) (OECD 202)
80-62-6 methyl methacrylate	
EC50/21d	49 mg/L (daphnia) (OECD 211)
EC50/48h	69 mg/l (daphnia) (EPA OTS 797.1300)
NOEC / 21d	37 mg/l (daphnia) (OECD 211)
ErC50 / 72 h	>110 mg/l (algae) (OECD 201)
NOEC / 72h	110 mg/l (algae) (OECD 201)
NOEC / 48h	48 mg/l (daphnia) (EPA OTS 797.1300)

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EbC50 / 72h	>110 mg/l (algae) (OECD 201)
NOEC/ 35d	9.4 mg/L (fish) (OECD 210)
LC50/ 35d	33.7 mg/L (fish) (OECD 210)
123-31-9 1,4-dihydrxybenzene	
EC50/48h	0.134 mg/l (daphnia) (OECD 202)
LC50/96h	0.638 mg/l (fish) (OECD 203)
ErC50 / 72 h	0.33 mg/l (algae) (OECD 201)
NOEC / 48h	0.095 mg/l (daphnia) (OECD 202)

· **12.2 Persistence and degradability**

100-42-5 styrene	
Biodegradation	70.9-100 % /28d (not defined)
80-62-6 methyl methacrylate	
Biodegradation	94 % /14d (not defined) (OECD 301C)
123-31-9 1,4-dihydrxybenzene	
Biodegradation	70 % /14d (not defined) (OECD 301C)

· **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**
For information on endocrine disrupting properties see section 11.
The product does not contain substances with endocrine disrupting properties.
· **12.7 Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Small quantities can be polymerized with the matching system component(s) and the cured solid material can be disposed of with the regular garbage. Larger quantities must be disposed of following the regulations of the local authorities.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN number or ID number**
· **ADR, IMDG, IATA** UN1866

· **14.2 UN proper shipping name**
· **ADR** 1866 RESIN SOLUTION

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· **IMDG, IATA**	RESIN SOLUTION
· **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.
· **Kemler Number:**	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
· **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 1866 RESIN SOLUTION, 3, III

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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

· **Information about limitation of use:**
Employment restrictions concerning young persons must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they 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.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.

· **Abbreviations and acronyms:**
SADT: Self Accelerating Decomposition Temperature
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 (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
Repr. 2: Reproductive toxicity – Category 2

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STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

· ***Sources***
(EC) 1272/2008: classification, labelling and packaging of substances and mixtures
(EC) 1907/2006: UK REACH
ADR/RID/ADN - IDMG - IATA: transport of dangerous goods by road, rail, inland waterway, with maritime vessels and for the air transport

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

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

· **1.1 Product identifier**

· **Trade name:** **Technovit 4000 syrup 2**

· **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** Resin for metallographic testing

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

· **Manufacturer/Supplier:**
Kulzer GmbH
Leipziger Straße 2, 63450 Hanau (Germany)
Tel.: +49 (0)6181 9689-2570 (Wehrheim)

· **Informing department:** email: technik.wehrheim@kulzer-dental.com

· **1.4 Emergency telephone number:** Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

SECTION 2: Hazards identification

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

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

Flam. Liq. 2	H225	Highly flammable liquid and vapour.
Skin Irrit. 2	H315	Causes skin irritation.
Eye Irrit. 2	H319	Causes serious eye irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Repr. 2	H361d	Suspected of damaging the unborn child.
STOT SE 3	H335	May cause respiratory irritation.
STOT RE 2	H373	May cause damage to the hearing organs through prolonged or repeated exposure.

· **2.2 Label elements**

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

· **Hazard pictograms**

GHS02 GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**
methyl methacrylate
styrene
methacrylic acid ester
2,2'-[(4-methylphenyl)imino]bisethanol

· **Hazard statements**
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H361d Suspected of damaging the unborn child.
H335 May cause respiratory irritation.
H373 May cause damage to the hearing organs through prolonged or repeated exposure.

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· **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor.
P405	Store locked up.

· **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**

· **Dangerous components:**

CAS: 80-62-6 EINECS: 201-297-1 Reg.nr.: 01-2119452498-28-xxxx	methyl methacrylate Flam. Liq. 2, H225 Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	20-60%
	methacrylic acid ester Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335 Specific concentration limit: STOT SE 3; H335: C ≥ 10%	5-25%
CAS: 100-42-5 EINECS: 202-851-5 Reg.nr.: 01-2119457861-32-xxxx	styrene Flam. Liq. 3, H226 Repr. 2, H361d; STOT RE 1, H372 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319 ATE: LC50/4 h inhalative: 11.8 mg/l	2.5-<10%
CAS: 3077-12-1 EINECS: 221-359-1 Reg.nr.: 01-2120791684-40-xxxx	2,2'-[(4-methylphenyl)imino]bisethanol Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Sens. 1, H317 Aquatic Chronic 3, H412 ATE: LD50 oral: 959 mg/kg	≤2.5%
CAS: 123-31-9 EINECS: 204-617-8 Reg.nr.: 01-2119524016-51-xxxx	1,4-dihydrxybenzene Muta. 2, H341; Carc. 2, H351 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Acute Tox. 4, H302; Skin Sens. 1, H317 ATE: LD50 oral: 375 mg/kg	<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 of danger area and instruct to lie down.
Personal protection for the First Aider.

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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; consult doctor in case of symptoms.
In case of unconsciousness bring patient into stable side position for transport.

· ***After skin contact***
Instantly wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.

· ***After eye contact***
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
Remove contact lenses, if present and easy to do. Continue rinsing.

· ***After swallowing***
Rinse out mouth and then drink plenty of water.
In case of persistent symptoms consult doctor.

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

· ***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, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

· ***For safety reasons unsuitable extinguishing agents*** *Water with a full water 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.
Can be released in case of fire
Carbon dioxide (CO2)
Carbon monoxide (CO)

· ***5.3 Advice for firefighters***

· ***Protective equipment:***
Wear self-contained breathing apparatus.
(EN 133)

· ***Additional information*** *-*

SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures***
Wear protective equipment. Keep unprotected persons away.
Avoid contact with eyes and skin.
Ensure adequate ventilation
Keep away from ignition sources

· ***6.2 Environmental precautions:*** *Prevent material from reaching sewage system, holes and cellars.*

· ***6.3 Methods and material for containment and cleaning up:***
Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
Send for recovery or disposal in suitable containers.

· ***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 information on disposal.

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SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Keep containers tightly sealed.
Avoid contact with eyes and skin.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Fumes can combine with air to form an explosive mixture.
Do not spray on flames or red-hot objects.
Protect against electrostatic charges.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and containers:**
Store in cool, dry place in tightly closed containers.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Components with critical values that require monitoring at the workplace:**	
80-62-6 methyl methacrylate	
WEL (Great Britain)	Short-term value: 416 mg/m³, 100 ppm Long-term value: 208 mg/m³, 50 ppm
IOELV (European Union)	Short-term value: 100 ppm Long-term value: 50 ppm
100-42-5 styrene	
WEL (Great Britain)	Short-term value: 1080 mg/m³, 250 ppm Long-term value: 430 mg/m³, 100 ppm
123-31-9 1,4-dihydrxybenzene	
WEL (Great Britain)	Long-term value: 0.5 mg/m³

· **DNELs**		
80-62-6 methyl methacrylate		
Oral	general population, long term, systemic	8.2 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	13.67 mg/Kg/d (not defined)
	general population, long term, systemic	8.2 mg/Kg/d (not defined)
Inhalative	worker industrial, acute, local	416 mg/m3 (not defined)
	worker industrial, long term, systemic	348.4 mg/m3 (not defined)
	worker industrial, long term, local	208 mg/m3 (not defined)
	general population, acute, local	208 mg/m3 (not defined)
	general population, long term, systemic	74.3 mg/m3 (not defined)

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100-42-5 styrene		
Oral	general population, long term, systemic	2.1 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	406 mg/Kg/d (not defined)
	general population, long term, systemic	343 mg/Kg/d (not defined)
Inhalative	worker industrial, acute, systemic	289 mg/m3 (not defined)
	worker industrial, long term, systemic	85 mg/m3 (not defined)
	worker industrial, long term, local	306 mg/m3 (not defined)
	general population, acute, systemic	174.25 mg/m3 (not defined)
	general population, long term, systemic	10.2 mg/m3 (not defined)
	general population, long term, local	182.75 mg/m3 (not defined)
3077-12-1 2,2'-[(4-methylphenyl)imino]bisethanol		
Oral	general population, long term, systemic	0.16 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	0.47 mg/Kg/d (not defined)
	general population, long term, systemic	0.17 mg/Kg/d (not defined)
Inhalative	worker industrial, long term, systemic	3.29 mg/m3 (not defined)
	general population, long term, systemic	0.58 mg/m3 (not defined)
123-31-9 1,4-dihydrxybenzene		
Oral	general population, long term, systemic	0.6 mg/Kg (not defined)
Dermal	worker industrial, long term, systemic	3.33 mg/Kg/d (not defined)
	general population, long term, systemic	1.66 mg/Kg/d (not defined)
Inhalative	worker industrial, long term, systemic	2.1 mg/m3 (not defined)
	general population, long term, systemic	1.05 mg/m3 (not defined)

· **PNECs**	
80-62-6 methyl methacrylate	
freshwater	0.94 mg/l (not defined)
marine water	0.094 mg/l (not defined)
sewage treatment plant	10 mg/l (not defined)
sediment, dry weight, freshwater	10.2 mg/Kg (not defined)
sediment, dry weight, marine water	0.102 mg/Kg (not defined)
soil, dry weight	1.48 mg/Kg (not defined)
100-42-5 styrene	
freshwater	0.028 mg/l (not defined)
marine water	0.014 mg/l (not defined)
sewage treatment plant	5 mg/l (not defined)
sediment, dry weight, freshwater	0.614 mg/Kg (not defined)
sediment, dry weight, marine water	0.307 mg/Kg (not defined)
soil, dry weight	0.2 mg/Kg (not defined)
3077-12-1 2,2'-[(4-methylphenyl)imino]bisethanol	
freshwater	0.026 mg/l (not defined)
marine water	0.003 mg/l (not defined)
sewage treatment plant	10 mg/l (not defined)
sediment, dry weight, freshwater	0.121 mg/Kg (not defined)
sediment, dry weight, marine water	0.012 mg/Kg (not defined)
soil, dry weight	0.009 mg/Kg (not defined)

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123-31-9 1,4-dihydrxybenzene	
freshwater	0.00057 mg/l (not defined)
marine water	0.000057 mg/l (not defined)
sewage treatment plant	0.71 mg/l (not defined)
sediment, dry weight, freshwater	0.0049 mg/Kg (not defined)
sediment, dry weight, marine water	0.00049 mg/Kg (not defined)
soil, dry weight	0.00064 mg/Kg (not defined)

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**
· **Appropriate engineering controls** No further data; see item 7.
· **Individual protection measures, such as personal protective equipment**
· **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
Use breathing protection in case of insufficient ventilation.
Filter A.
· **Hand protection**
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
If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.
Solvent resistant gloves
Check protective gloves prior to each use for their proper condition.
recommended
· **Material of gloves**
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.
Fluorocarbon rubber (Viton)
>0,7 mm
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
>480 min
· **Eye/face protection** Safety glasses
· **Body protection:** Light weight protective clothing
· **Environmental exposure controls**
Do not allow to enter drainage system, surface or ground water.
Do not allow to enter the ground/soil.

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SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**
· **General Information**
· **Physical state** Fluid

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· **Colour:**	Green
· **Smell:**	Aromatic
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	Not determined
· **Boiling point or initial boiling point and boiling range**	100.3 °C (80-62-6 methyl methacrylate)
· **Flammability**	Not applicable.
· **Lower and upper explosion limit**	
· **Lower:**	1.2 Vol %
· **Upper:**	12.5 Vol %
· **Flash point:**	10 °C (80-62-6 methyl methacrylate)
· **Ignition temperature:**	425 °C
· **Decomposition temperature:**	Not determined.
· **SADT**	
· **pH**	Not determined.
· **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.
· **Steam pressure at 20 °C:**	37.8 hPa
· **Density and/or relative density**	
· **Density**	Not determined
· **Relative density**	Not determined.
· **Vapour density**	Not determined.

· **9.2 Other information**	No further relevant information available.
· **Appearance:**	
· **Form:**	Fluid
· **Important information on protection of health and environment, and on safety.**	
· **Self-inflammability:**	Product is not selfigniting.
· **Explosive properties:**	Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
· **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**	
Highly 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
· **Substances and mixtures, which emit flammable gases in contact with water**	Void

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· **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**
· **Conditions to be avoided:** No decomposition if used and stored 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:** None
· **Additional information:** -

SECTION 11: Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**		
80-62-6 methyl methacrylate		
Oral	LD50	~7,900 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (guinea pig) (OECD 402)
Inhalative	LC50/4 h	29.8 mg/l (rat)
100-42-5 styrene		
Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
Inhalative	LC50/4 h	11.8 mg/l (ATE)
		11.8 mg/l (rat)
3077-12-1 2,2'-[(4-methylphenyl)imino]bisethanol		
Oral	LD50	959 mg/kg (ATE)
		959 mg/kg (rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (rat) (OECD 402)
123-31-9 1,4-dihydrxybenzene		
Oral	LD50	375 mg/kg (ATE)
		>375 mg/kg (rat) (OECD 401)
Dermal	LD50	>2,000 mg/kg (rabbit) (OECD 402)

· **Skin corrosion/irritation**
Causes skin irritation.
· **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.

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· ***Reproductive toxicity***
Suspected of damaging the unborn child.
· ***STOT-single exposure***
May cause respiratory irritation.
· ***STOT-repeated exposure***
May cause damage to the hearing organs through prolonged or repeated exposure.
· ***Aspiration hazard*** *Based on available data, the classification criteria are not met.*
· ***Additional toxicological information:***
· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
Repr. 2

· ***11.2 Information on other hazards***
· ***Endocrine disrupting properties***
Taking into account the current state of scientific knowledge, no data on endocrine disrupting properties of the product are available.

None of the ingredients is listed.

SECTION 12: Ecological information

· ***12.1 Toxicity***

· ***Aquatic toxicity:***	
80-62-6 methyl methacrylate	
EC50/21d	*49 mg/L (daphnia) (OECD 211)*
EC50/48h	*69 mg/l (daphnia) (EPA OTS 797.1300)*
NOEC / 21d	*37 mg/l (daphnia) (OECD 211)*
ErC50 / 72 h	*>110 mg/l (algae) (OECD 201)*
NOEC / 72h	*110 mg/l (algae) (OECD 201)*
NOEC / 48h	*48 mg/l (daphnia) (EPA OTS 797.1300)*
EbC50 / 72h	*>110 mg/l (algae) (OECD 201)*
NOEC/ 35d	*9.4 mg/L (fish) (OECD 210)*
LC50/ 35d	*33.7 mg/L (fish) (OECD 210)*
100-42-5 styrene	
EL50/48h	*4.7 mg/L (daphnia) (OECD 202)*
LC50/96h	*10 mg/l (fish) (OECD 203)*
ErC50 / 72 h	*4.9 mg/l (algae) (EPA OTS 797.1050)*
NOEC / 48h	*1.9 mg/l (daphnia) (OECD 202)*
3077-12-1 2,2'-[(4-methylphenyl)imino]bisethanol	
EC50/48h	*48 mg/l (daphnia) (OECD 202)*
LC50/96h	*>100 mg/l (fish) (OECD 203)*
ErC50 / 72 h	*>100 mg/l (algae) (OECD 201)*
NOEC / 72h	*100 mg/l (algae) (OECD 201)*
123-31-9 1,4-dihydrxybenzene	
EC50/48h	*0.134 mg/l (daphnia) (OECD 202)*
LC50/96h	*0.638 mg/l (fish) (OECD 203)*
ErC50 / 72 h	*0.33 mg/l (algae) (OECD 201)*
NOEC / 48h	*0.095 mg/l (daphnia) (OECD 202)*

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· **12.2 Persistence and degradability**	
80-62-6 methyl methacrylate	
Biodegradation	94 % /14d (not defined) (OECD 301C)
100-42-5 styrene	
Biodegradation	70.9-100 % /28d (not defined)
3077-12-1 2,2'-[(4-methylphenyl)imino]bisethanol	
Biodegradation	1.5 % /29d (not defined) (OECD 301D)
123-31-9 1,4-dihydrxybenzene	
Biodegradation	70 % /14d (not defined) (OECD 301C)

· **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**
For information on endocrine disrupting properties see section 11.
· **12.7 Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into soil.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Small quantities can be polymerized with the matching system component(s) and the cured solid material can be disposed of with the regular garbage. Larger quantities must be disposed of following the regulations of the local authorities.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· **14.1 UN number or ID number**	
· **ADR, IMDG, IATA**	UN1866
· **14.2 UN proper shipping name**	
· **ADR**	1866 RESIN SOLUTION, special provision 640D
· **IMDG, IATA**	RESIN SOLUTION

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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** II

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

· **14.6 Special precautions for user** Warning: Flammable liquids.
· **Kemler Number:** 33
· **EMS Number:** F-E,S-E
· **Stowage Category** B

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

· **Transport/Additional information:** -

· **ADR**
· **Limited quantities (LQ)** 5L
· **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** D/E

· **IMDG**
· **Limited quantities (LQ)** 5L
· **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1866 RESIN SOLUTION, SPECIAL PROVISION 640D, 3, II

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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

· **Information about limitation of use:**
Employment restrictions concerning young persons must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.

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

SECTION 16: Other information

These data are based on our present knowledge. However, they 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.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**
SADT: Self Accelerating Decomposition Temperature
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 (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2

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Carc. 2: Carcinogenicity – Category 2
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· ***Sources***
(EC) 1272/2008: classification, labelling and packaging of substances and mixtures
(EC) 1907/2006: UK REACH
ADR/RID/ADN - IDMG - IATA: transport of dangerous goods by road, rail, inland waterway, with maritime vessels and for the air transport

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