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

* 1.1 Product identifier

Trade name/designation OPTO CLEAN

Unique Formula Identifier UFI: 8K50-20MV-V00J-UV22

1.2 Relevant identified uses of the substance or mixture and uses advised against

Sector of uses [SU]
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU3 Industrial uses

Process categories [PROC]
PROC8a Transfer of substance or mixture (charging and discharging) at non- dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC13 Treatment of articles by dipping and pouring

Environmental release categories [ERC]
ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

Product Categories [PC]
PC35 Washing and cleaning products

Use of the substance/mixture
Mildly alkaline cleaning concentrate for the aqueous ultrasonic cleaning of glasses and frames of glasses.

1.3 Details of the supplier of the safety data sheet

Supplier
Elma Schmidbauer GmbH
Gottlieb-Daimler-Str. 17
D-78224 Singen (Htwl.)
Telephone +49 7731 882-0
Telefax +49 7731 882-266
E-mail info@elma-ultrasonic.com
Website www.elma-ultrasonic.com

Department responsible for information:
Chemie/Labor: Email: chemlab@elma-ultrasonic.com

* 1.4 Emergency telephone number

Vergiftungs-Informations-Zentrale Freiburg (Sprache/Language: DE, EN) +49 761 19240

* SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Remark
The product is not classified as dangerous according to Regulation (EC) 1272/2008 [GHS].
Classification procedure for serious eye damage/eye irritation: Bridging principle ' Substantially similar mixtures.'

* 2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Special rules for supplemental label elements for certain mixtures
EUH210 Safety data sheet available on request.

*** Other labelling**
Labelling for contents according to regulation (EC) No. 648/2004:
< 5% anionic surfactants
< 5% non-ionic surfactants
perfumes

*** 2.3 Other hazards**

* **Adverse human health effects and symptoms**
The product does not contain any substances with endocrine-disrupting properties >=0.1%.

* **Adverse environmental effects**
Aquatic Acute 3 H402: Harmful to aquatic life.
The product does not contain any substances with endocrine-disrupting properties >=0.1%.

Results of PBT and vPvB assessment
The product does not contain any PBT-/vPvB-substances according to the recipe.

* SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

*** 3.2 Mixtures**

Hazardous ingredients

CAS No.	EC No.	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
107-98-2	203-539-1	1-methoxy-2-propanol	5 - 15 weight-%	Flam. Liq. 3; H226 STOT SE 3; H336	ATE(inhalation vapour): 25.5 mg/L
26183-52-8		decan-1-ol, ethoxylated	< 5 weight-%	Acute Tox. 4; H302 Eye Dam. 1; H318	ATE(oral): 500-2000 mg/kg
102-71-6	203-049-8	triethanolamine [2,2',2''-nitrilotriethanol]	< 5 weight-%		
69011-36-5	931-138-8	isotridecanol, ethoxylated	< 5 weight-%	Eye Dam. 1; H318 Aquatic Chronic 3; H412	

REACH No.	Substance name
01-2119457435-35	1-methoxy-2-propanol
Not relevant (polymer).	decan-1-ol, ethoxylated
01-2119486482-31	triethanolamine [2,2',2''-nitrilotriethanol]
Not relevant (polymer).	isotridecanol, ethoxylated

Additional information
Aqueous mildly alkaline mixture from anionic and non-ionic surfactants, corrosion inhibitors, complexing agent, 1-methoxypropan-2-ol (solvent) and dye.

* SECTION 4: First aid measures

*** 4.1 Description of first aid measures**

General information
In the event of persistent symptoms receive medical treatment.

* **Following skin contact**
In case of contact with skin wash off with water.

After eye contact
After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Following ingestion
Do NOT induce vomiting.
If swallowed seek medical advice immediately and show the doctor packing or label.
Rinse mouth immediately and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms
No further informations available.

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor
No further informations available.

* SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water
alcohol resistant foam
Extinguishing powder
Carbon dioxide (CO_2)

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
In case of fire formation of dangerous gases possible.
In the event of fire the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide

* 5.3 Advice for firefighters

* **Special protective equipment for firefighters**
Do not inhale explosion and combustion gases.

* **Additional information**
Co-ordinate fire-fighting measures to the fire surroundings.
The product itself does not burn.

* SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Use personal protection equipment.
Special danger of slipping by leaking/spilling product.

For emergency responders
Personal protection equipment
Use personal protection.
Forms slippery surfaces with water.
Special danger of slipping by leaking/spilling product.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

For containment
Suitable material for taking up:
Universal binder
Flush away residues with water.
Take up mechanically and send for disposal.

* 6.4 Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8

* SECTION 7: Handling and storage

* 7.1 Precautions for safe handling

*

Protective measures
Avoid contact with eyes and skin.
No special measures are necessary.
The product is not combustible.

Advices on general occupational hygiene
Make available sufficient washing facilities
Keep away from food and drink.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep/Store only in original container.
Keep container tightly closed.

Storage class
12 non-combustible liquids that cannot be assigned to any of the above storage classes

Further information on storage conditions
Keep locked up and out of reach of children.
Protect from heat and direct solar radiation.
Keep in a cool, well-ventilated place.
Do not keep at temperatures below 5°C.
Do not keep at temperatures above 30°C.
Storage time: 5 years.

7.3 Specific end use(s)

Recommendation
no further

* SECTION 8: Exposure controls/personal protection

* 8.1 Control parameters

*

Occupational exposure limit values

CAS No.	EC No.	Substance name	occupational exposure limit value
107-98-2	203-539-1	1-Methoxypropanol-2	100 [ml/m³(ppm)] 375 [mg/m³] Short-term(ml/m³) 150 Short-term(mg/m³) 568 skin resorptive 2000/39/EC
107-98-2	203-539-1	1-Methoxypropan-2-ol	100 [ml/m³(ppm)] 375 [mg/m³] Short-term(ml/m³) 150 (1) Short-term(mg/m³) 568 (1) (1) 15 minutes reference period (IE)
102-71-6	203-049-8	Triethanolamine	5 [mg/m³] (IE)
107-98-2	203-539-1	1-Methoxypropan-2-ol	100 [ml/m³(ppm)] 375 [mg/m³] Short-term(ml/m³) 150 Short-term(mg/m³) 560 (UK)

* **DNEL worker**

CAS No.	Substance name	DNEL value	DNEL type	Remark
107-98-2	1-methoxy-2-propanol	183 mg/kg bw/day	long-term dermal (systemic)	
107-98-2	1-methoxy-2-propanol	369 mg/m³	long-term inhalative (systemic)	
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	1 mg/m³	long-term inhalative (local)	
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	7.5 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 50

* **PNEC**

CAS No.	Substance name	PNEC Value	PNEC type	Remark
107-98-2	1-methoxy-2-propanol	10 mg/L	aquatic, freshwater	Assessment factor 100
107-98-2	1-methoxy-2-propanol	100 mg/L	sewage treatment plant (STP)	Assessment factor 10
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	0.32 mg/L	aquatic, freshwater	Assessment factor 50
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	10 mg/L	sewage treatment plant (STP)	Assessment factor 100

8.2 Exposure controls

Personal protection equipment

Eye/face protection
safety goggles

Environmental exposure controls

Technical measures to prevent exposure
Avoid penetration into the subsoil/soil.
Do not discharge into surface waters.

Additional information
Occupational exposure limits for triethanolamine.

* SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state
liquid

Colour
pink

Odour
mild

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:			1-methoxy-2-propanol: 38 - 360 mg/m3 (10 - 96 ppm).
Melting point/freezing point	solidifying range ≤ 0 °C		
Boiling point or initial boiling point and boiling range	≥ 100 °C		
flammability	solid		not applicable
flammability	gaseous		not applicable

	Value	Method	Source, Remark
Lower and upper explosion limit	Upper explosion limit 13.7 Vol-%		Value of 1-methoxy-2-propanol.
Lower and upper explosion limit	Lower explosion limit 1.5 Vol-%		Value of 1-methoxy-2-propanol.
Flash point	> 61 °C	DIN 51755 part 1	Does not maintain the combustion.
Auto-ignition temperature	270 °C		Value of 1-methoxy-2-propanol.
Decomposition temperature	> 100 °C		
pH	in delivery state 9.5- 10 (20°C)		
Viscosity			not determined
Solubility(ies)	Water solubility		miscible
Partition coefficient n-octanol/water (log value)	-0.437 (25°C)		Value of 1-methoxy-2-propanol.
Vapour pressure	approx. 25 hPa (20°C)		
Density and/or relative density	1.02 g/cm³ (20°C)		
Relative vapour density	3.11		Value of 1-methoxy-2-propanol.
particle characteristics			not applicable (liquid).

* **9.2 Other information**

* **Information with regard to physical hazard classes**

* **Explosives**

* **Assessment/classification**
The mixture does not contain any explosive substances (CLP I 2.1.4.3 a).
CLP I 2.1.4.3 a: The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with explosive properties.

* **flammable gases**

* **Assessment/classification**
not applicable (liquid).

* **Aerosols**

* **Assessment/classification**
not relevant - no aerosol.
The classification criteria for this hazard class are not met by definition.

* **Oxidising gas**

* **Assessment/classification**
not applicable (liquid).

* **Gases under pressure**

* **Assessment/classification**
not applicable (liquid - no dissolved gas).

* **flammable liquids**

* **Assessment/classification**
Flash point > 35 °C, does not maintain the combustion.
The mixture is not classified as flammable liquids.

* **flammable solids**

* **Assessment/classification**
not applicable (liquid).

* **Self-reactive substances and mixtures**

* **Assessment/classification**
The mixture does not contain any self-reactive substances (CLP I 2.8.4.2 a).
CLP I 2.8.4.2 a: There are no chemical groups present in the molecule associated with explosive or self reactive properties.

* **Pyrophoric liquids**

* **Assessment/classification**
The mixture does not contain any pyrophoric substances - not spontaneously flammable (CLP I 2.9.4.1).
CLP I 2.9.4.1: The classification procedure for pyrophoric liquids need not be applied when experience in manufacture or handling shows that the substance or mixture does not ignite spontaneously on coming into contact with air at normal temperatures (i.e. the substance is known to be stable at room temperature for prolonged periods of time (days)).

* **Pyrophoric solids**

* **Assessment/classification**
not applicable (liquid).

* **self-heating substances and mixtures**

* **Assessment/classification**
The mixture does not contain any self-heating substances.

* **Substances or mixtures which, in contact with water, emit flammable gases**

* **Assessment/classification**
not relevant - in contact with water releases no flammable gases (CLP I 2.12.4.1).
CLP I 2.12.4.1: The classification procedure for this class need not be applied if: (a) the chemical structure of the substance or mixture does not contain metals or metalloids; or (b) experience in production or handling shows that the substance or mixture does not react with water, e.g. the substance is manufactured with water or washed with water; or (c) the substance or mixture is known to be soluble in water to form a stable mixture.

* **Oxidising liquids**

* **Assessment/classification**
The mixture does not contain any oxidising substances.

* **Oxidising solids**

* **Assessment/classification**
not applicable (liquid).

* **Organic peroxides**

* **Assessment/classification**
The mixture does not contain any organic peroxides.

* **Corrosive to metals**

Safety characteristics

	Value	Method, Result	Source, Remark
Corrosion rate (mm aluminium/year)	< 6.25 mm/a	Expert judgement and weight of evidence determination.	
Corrosion rate (mm steel/year)	< 6.25 mm/a	Expert judgement and weight of evidence determination.	

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

* **Desensitised explosives**

* **Assessment/classification**
The mixture does not contain any desensitised explosive substances.

Other safety characteristics

	Value	Method	Source, Remark
Evaporation rate			Water: 0.36 (ASTM D3539).
Evaporation rate			1-methoxy-2-propanol: 0.75 (ASTM D3539).
Solvent content	< 15 %		
Explosive properties			none
Oxidising properties			none

* **Other information**
No further relevant informations available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazardous reactions known if used as directed.

10.2 Chemical stability

Stable at ambient temperature.

10.3 Possibility of hazardous reactions

Reactions with concentrated acids and alkalies above 50°C.

10.4 Conditions to avoid

Heat and direct solar radiation.

10.5 Incompatible materials

Reactions with strong acids and alkalies.

10.6 Hazardous decomposition products

No decomposition if used as directed.

* SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

* **Acute toxicity**

Animal data

	Effective dose	Method,Evaluation	Source, Remark
Acute oral toxicity	> 5000 mg/kg	ATE: Acute Toxicity Estimate	
	CAS No.26183-52-8 decan-1-ol, ethoxylated LD50: 500- 2000 mg/kg Species Rat		
Acute dermal toxicity	> 5000 mg/kg	ATE: Acute Toxicity Estimate	
Acute inhalation toxicity	Acute inhalation toxicity (vapour) > 50 mg/L	ATE: Acute Toxicity Estimate	

	Effective dose	Method,Evaluation	Source, Remark
	CAS No.107-98-2 1-methoxy-2-propanol Acute inhalation toxicity (vapour) 25.5 mg/L Species Rat Exposure time 4 h		LCLo

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

Skin corrosion/irritation

Animal data

Result / Evaluation	Method	Source, Remark
non-irritant.	Calculation method.	

Serious eye damage/irritation

Animal data

Result / Evaluation	Method	Source, Remark
slightly irritant but not relevant for classification.	Bridging principle "Substantially similar mixtures".	

* **Sensitisation to the respiratory tract**

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

Skin sensitisation

Animal data

Result / Evaluation	Dose / Concentration	Method	Source, Remark
not sensitising.		Calculation method.	

* **Germ cell mutagenicity**

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

* **Carcinogenicity**

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

* **Reproductive toxicity**

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

* **Overall Assessment on CMR properties**

The mixture is not classified as mutagen / not classified as carcinogen / not classified as reproductive toxicant.

* **STOT-single exposure**

* **STOT SE 1 and 2**

* **Assessment/classification**
The mixture is not classified as specific target organ toxicant (single exposure).
Based on available data, the classification criteria are not met.

* **STOT SE 3**

* **Irritation to respiratory tract**

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

* **Narcotic effects**

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

* **STOT-repeated exposure**

* **Assessment/classification**
The mixture is not classified as specific target organ toxicant (repeated exposure).
Based on available data, the classification criteria are not met.

* **Aspiration hazard**

* **Assessment/classification**
The mixture is not classified as aspiration hazardous.
Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Symptoms related to the physical, chemical and toxicological characteristics

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties			The product does not contain any substances with endocrine-disrupting properties >=0.1%.

* **Other information**

Test on similar mixture (elma opto clean, Batch 0146070646): OECD 405(rabbit): not irritating to eyes.
Has degreasing effect on the skin.

* SECTION 12: Ecological information

* 12.1 Toxicity

* **Aquatic toxicity**

	Effective dose	Method,Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 39.6 mg/L	calculated.	
	CAS No.69011-36-5 isotridecanol, ethoxylated LC50: >1- 10 mg/L Species Leuciscus idus (golden orfe) Test duration 96 h	DIN 38412 / part 15	
Chronic (long-term) fish toxicity	CAS No.69011-36-5 isotridecanol, ethoxylated NOEC 1.73 mg/L		
Acute (short-term) toxicity to crustacea	EC50 39.5 mg/L	calculated.	
	CAS No.69011-36-5 isotridecanol, ethoxylated EC50 >1- 10 mg/L Species Daphnia magna (Big water flea) Test duration 48 h		
Chronic (long-term) toxicity to aquatic invertebrate	CAS No.69011-36-5 isotridecanol, ethoxylated NOEC 1.36 mg/L		
Acute (short-term) toxicity to algae and cyanobacteria	EC50 38.8 mg/L	calculated.	

	Effective dose	Method,Evaluation	Source, Remark
	CAS No.69011-36-5 isotridecanol, ethoxylated EC50 >1- 10 mg/L Species Scenedesmus subspicatus Test duration 72 h	DIN 38412 / part 9	
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	CAS No.69011-36-5 isotridecanol, ethoxylated NOEC: 0.6 mg/L		
	CAS No.69011-36-5 isotridecanol, ethoxylated NOEC: >0.1- 1 mg/L Species Skeletonema costatum Test duration 72 h		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	not determined		

* **Assessment/classification**
Harmful to aquatic life.

* **12.2 Persistence and degradability**

	Value	Method	Source, Remark
Biodegradation	Degradation rate > 85 %	calculated.	DOC reduction Readily biodegradable (according to OECD criteria).
Biodegradation	Degradation rate 100 %	Neutralization, pH-measurement	Alkaline properties can be eliminated up to 100% by neutralization.
Biodegradation	Degradation rate 96 % Test duration 19 d	OECD 301E/ EEC 92/69/V, C.4-B	CAS No.102-71-6 triethanolamine [2,2',2''-nitrilotriethanol]
Biodegradation	Degradation rate > 60 %	OECD 301B/ ISO 9439/ EEC 92/69/V, C.4-C	CAS No.26183-52-8 decan-1-ol, ethoxylated
Biodegradation	Degradation rate ≥ 90 % Test duration 28 d	OECD 301E/ EEC 92/69/V, C.4-B	CAS No.26183-52-8 decan-1-ol, ethoxylated
Biodegradation	Degradation rate 96 % Test duration 28 d	OECD 301E/ EEC 92/69/V, C.4-B	CAS No.107-98-2 1-methoxy-2-propanol
Biodegradation	Degradation rate > 60 % Test duration 28 d	OECD 301B/ ISO 9439/ EEC 92/69/V, C.4-C	CAS No.69011-36-5 isotridecanol, ethoxylated
Biodegradation	Degradation rate > 90 % Test duration 28 d	OECD 301E/ EEC 92/69/V, C.4-B	CAS No.69011-36-5 isotridecanol, ethoxylated

12.3 Bioaccumulative potential

Assessment/classification
1-methoxy-2-propanol: Accumulation in organisms is not expected.
decan-1-ol, ethoxylated: not available.
isotridecanol, ethoxylated: Bioaccumulation is improbable.
triethanolamine: Accumulation in organisms is not expected (BCF: <0,4).

12.4 Mobility in soil

Assessment/classification
1-methoxy-2-propanol: Dissolves in water. Highly mobile in soil.
decan-1-ol, ethoxylated: not available.
isotridecanol, ethoxylated: strong adsorption on soil, immobile.
triethanolamine: Adsorption on soil is not expected (Koc: 10).

12.5 Results of PBT and vPvB assessment

The product does not contain any PBT-/vPvB-substances according to the recipe.

12.6 Endocrine disrupting properties

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties			The product does not contain any substances with endocrine-disrupting properties >=0.1%.

* 12.7 Other adverse effects

	Value	Method	Source, Remark
Ozone depletion potential (ODP):			Based on available data, the classification criteria are not met.

* Additional ecotoxicological information

	Value	Method	Source, Remark
Chemical oyxgen demand (COD)	approx. 490 mgO2/g	calculated.	
AOX			The product does not contain any organically bound halogens according to the recipe.

Additional information
The surfactants in our product meet the criteria for biodegradation as laid down in Annex III of the Regulation (EC) No 648/2004 on detergents.
Acute aquatic environmental hazards: Aquatic Acute 3 H402: Harmful to aquatic life.
The mixture is not classified as chronic hazardous to the aquatic environment.
Do not allow uncontrolled discharge of product into the environment.
No further relevant informations available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste codes/waste designations according to EWC/AVV

Waste code product	Waste name
200130	detergents other than those mentioned in 20 01 29

Appropriate disposal / Product
Suitable for neutralization are acetic acid (60%, liquid) or citric acid (solid powder, crystallized) if a stainless steel bath is used.
Product is allowed to discharge into sewage treatment plants, but in accordance with official regulations.

Appropriate disposal / Package
Non-contaminated packages may be recycled.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	-	-	-
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No	No	No

14.6 Special precautions for user

none

14.7 Maritime transport in bulk according to IMO instruments

not relevant

Land transport (ADR/RID)

Remark
Not classified for this transport carrier.

Sea transport (IMDG)

Remark
No hazardous material as defined by the prescriptions.

Air transport (ICAO-TI / IATA-DGR)

Remark
No hazardous material as defined by the prescriptions.

* SECTION 15: Regulatory information

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

*** EU legislation**

Authorisations
not relevant

Restrictions on use
Regulation (EC) No 1907/2006 (REACH), Annex XVII No 40 - not relevant if used as directed.

*** Other regulations (EU)**

To follow:
Regulation (EC) No. 648/2004 (Detergents regulation)
Directive 2012/18/EU, Annex I: not mentioned.

*** Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive] VOC**
VOC content, delivery state < 15 %

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment were not carried out.
1-methoxy-2-propanol: For this substance a chemical safety assessment has been carried out.

* SECTION 16: Other information

*

Abbreviations and acronyms
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM: American Society for Testing and Materials
ATE: Acute Toxicity Estimate
AVV: Waste Shipment Ordinance (DE)
DGR: Dangerous Goods Regulations (IATA)
DIN: German Institute for Standardization / German Industrial Standard
DNEL: derived no-effect level
DOC: Dissolved Organic Carbon
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization
LDL0: Lowest Lethal (fatal) Dose
OECD: Organisation for Economic Cooperation and Development
PBT: persistent and bioaccumulative and toxic
PNEC: Predicted No Effect Concentration
RID: Dangerous goods regulations for transport by rail
TI: Technical Instruction
TRGS: Technical Rules for Hazardous Substances
VOC: Volatile organic compounds
vPvB: very persistent, very bioaccumulative

Key literature references and sources for data
Own measurements.
European Chemicals Agency, http://echa.europa.eu/.
Informations from our suppliers.

Additional information
National and local regulations concerning chemicals shall be observed.
These data are given according to our actual knowledge about this product.This data sheet does not correspond to an assurance by virtue of a contract for properties of the product.

Relevant H- and EUH-phrases (Number and full text)

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

Indication of changes
* Data changed compared with the previous version