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

1.1 Product identifier

Trade name/designation elma clean 112 (EC 112)

Unique Formula Identifier UFI: 5Y00-R0CF-A00U-3EKK

Product category PC-CLN-OTH Other cleaning, care and maintenance products (excludes biocidal products)

Hazard components
potassium hydroxide

* 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

* **Product Categories [PC]**
PC35 Washing and cleaning products

Use of the substance/mixture
Strong alkaline cleaning component for metal and plastic surfaces for immersion and ultrasonic cleaning, suitable for membrane filtration. Free of surfactants.

Uses advised against
Do not use for injecting or spraying.

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

Classification according to Regulation (EC) No 1272/2008 [CLP]	Classification procedure
Met. Corr. 1, H290	Expert judgement and weight of evidence determination.
Acute Tox. 4, H302	Calculation method.
Skin Corr. 1A, H314	Calculation method.
Eye Dam. 1, H318	Calculation method.

Hazard statements for physical hazards
H290 May be corrosive to metals.

Hazard statements for health hazards
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

2.2 Label elements

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

Hazard components
potassium hydroxide

Hazard pictograms



GHS05



GHS07

Signal word
Danger

Hazard statements
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

Precautionary statements
P405 Store locked up.
P102 Keep out of reach of children.
P234 Keep only in original packaging.
P260 Do not breathe mist/spray.
P280 Wear protective gloves/protective clothing and eye protection/face protection.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P332 + P313 If skin irritation occurs: Get medical advice/attention.

Other labelling
Labelling for contents according to regulation (EC) No. 648/2004:
5 - 15% phosphates

* 2.3 Other hazards

*** Adverse human health effects and symptoms**
This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

*** Adverse environmental effects**
Aquatic Acute 2 H401: Toxic to aquatic life.
This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

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	Index No	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
1310-58-3	215-181-3	019-002-00-8	potassium hydroxide	15 - 30 weight-%	Met. Corr. 1 ; H290 Acute Tox. 3; H301 Skin Corr. 1A; H314 Eye Dam. 1; H318	Skin Corr. 1A;H314: C>=5% Skin Corr. 1B;H314: 2%<=C<5% Skin Irrit. 2;H315: 0.5%<=C<2% Eye Dam. 1;H318: C>=2% Eye Irrit. 2;H319: 0.5%<=C<2%
7320-34-5	230-785-7		tetrapotassium pyrophosphate	5 - 15 weight-%	Eye Irrit. 2; H319	
102-71-6	203-049-8		triethanolamine [2,2',2''-nitrilotriethanol]	5 - 15 weight-%		

REACH No.	Substance name
01-2119487136-33	potassium hydroxide
01-2119489369-18	tetrapotassium pyrophosphate
01-2119486482-31	triethanolamine [2,2',2''-nitrilotriethanol]

Additional information
Aqueous strong alkaline cleaning component, containing potassium hydroxide, phosphates and salts of organic acids.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
Remove contaminated, saturated clothing immediately.
Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.

Following inhalation
Provide fresh air.
In case of inhaling spray mist, consult a physician.
In the event of symptoms refer for medical treatment.

Following skin contact
In case of contact with skin wash off immediately with plenty of water.
In case of skin irritation, consult a physician.

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.
Call a physician immediately.
Rinse mouth immediately and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

Effects
Risk of stomach perforation.

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Keep under medical supervision for at least 48 hours.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
In case of fire formation of dangerous gases possible.

5.3 Advice for firefighters

No data available

Additional information
The product itself does not burn.
Co-ordinate fire-fighting measures to the fire surroundings.
Do not inhale explosion and combustion gases.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

* 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
Remove persons to safety.
Personal protection equipment
Use personal protection.
Use breathing apparatus if exposed to vapours/dust/aerosol.
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.
Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

For containment
Suitable material for taking up:
Sand
Sawdust
Universal binder
Kieselguhr
Flush away residues with water.
Use chemical neutralizers.
After taking up the material dispose according to regulation.

* 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:
generation/formation of aerosols
Do not inhale aerosols
Handle and open container with care.
Use only alkali-resistant equipment.
When diluting/dissolving, always have the water ready first, then slowly stir in the product.
The product is not combustible.

Advices on general occupational hygiene
Make available sufficient washing facilities
Remove contaminated, saturated clothing immediately.
Keep away from food and drink.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Suitable floor material:
Alkali-resistant
Keep/Store only in original container.
Keep container tightly closed.

Materials to avoid
Do not store together with:
Acid

Further information on storage conditions
Keep locked up and out of reach of children.
Protect from heat and direct solar radiation.
Do not keep at temperatures below -5°C.
Do not keep at temperatures above 30°C.
Storage time: 3 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
1310-58-3	215-181-3	Potassium hydroxide	Short-term(mg/m³) 2 (1) 15 minutes reference period (IE)
102-71-6	203-049-8	Triethanolamine	5 [mg/m³] (IE)
1310-58-3	215-181-3	Potassium hydroxide	Short-term(mg/m³) 2 (UK)

* **DNEL worker**

CAS No	Substance name	DNEL value	DNEL type	Remark
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	7.5 mg/kg bw/day	long-term dermal (systemic)	Assessment factor 50
102-71-6	triethanolamine [2,2',2''-nitrilotriethanol]	1 mg/m³	long-term inhalative (local)	
1310-58-3	potassium hydroxide	1 mg/m³	long-term inhalative (local)	Assessment factor 1

* **PNEC**

CAS No	Substance name	PNEC Value	PNEC type	Remark
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
tightly fitting goggles

Hand protection
Gloves (alkali-resistant)
Glove material specification [make/type, thickness]: FKM, 0.4mm.
Glove material specification [make/type, thickness]: NBR, 0.35mm.
Glove material specification [make/type, thickness]: Butyl, 0.5mm.
Glove material specification [make/type, thickness]: NR, 0.5mm.

Body protection:
Required properties:
alkali-resistant

Respiratory protection
Respiratory protection necessary at:
aerosol or mist formation
Suitable respiratory protection apparatus:
Short term: filter apparatus, Filter P2

Environmental exposure controls

Technical measures to prevent exposure
Neutralization is normally necessary before a waste water is discharged into sewage treatment plants.
Avoid penetration into the subsoil/soil.
Do not discharge into surface waters.

Additional information
Occupational exposure limits for triethanolamine.
Occupational exposure limits for potassium hydroxide.

* SECTION 9: Physical and chemical properties

* 9.1 Information on basic physical and chemical properties

Physical state
liquid

Colour
yellowish - brown

Odour
characteristic

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:			not determined
Melting point/freezing point	solidifying range < 0 °C		
Boiling point or initial boiling point and boiling range	> 100 °C		
flammability	solid		not applicable

	Value	Method	Source, Remark
flammability	gaseous		not applicable
Lower and upper explosion limit	Upper explosion limit		not relevant
Lower and upper explosion limit	Lower explosion limit		not relevant
Flash point			No flash point up to 100 °C.
Auto-ignition temperature	324 °C		Value of triethanolamine.
Decomposition temperature	≥ 100 °C		
pH	in delivery state 14 (20°C)		strong alkaline
Viscosity	Dynamic viscosity 9.4 mPa*s (20°C)		
Solubility(ies)	Water solubility		miscible
Partition coefficient n-octanol/water (log value)	approx. -2		Value of tetrapotassium pyrophosphate.
Vapour pressure	approx. 23 hPa (20°C)		
Density and/or relative density	1.362 g/cm³ (20°C)		
Relative vapour density	5.13		Value of triethanolamine.
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
not flammable, not combustible (No flash point below 100°C).

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)			not available

Assessment/classification
The mixture is classified as corrosive to metals (Met. Corr. 1 H290).

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).

	Value	Method	Source, Remark
Solvent content	0 %		
Explosive properties			none
Oxidising properties			none

Other information
No further relevant informations available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Exothermic reaction with:
Acid
No further hazardous reactions known if used as directed.

10.2 Chemical stability

Stable at ambient temperature.

10.3 Possibility of hazardous reactions

Exothermic reaction with:
Acid
Reactions with light metals, with evolution of hydrogen.

10.4 Conditions to avoid

Heat and direct solar radiation.

10.5 Incompatible materials

Reactions with strong acids.
Corrodes aluminium.

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	1260 mg/kg	ATE: Acute Toxicity Estimate	
	CAS No1310-58-3 potassium hydroxide LD50: 273 mg/kg Species Rat		
Acute dermal toxicity	> 5000 mg/kg	ATE: Acute Toxicity Estimate	
Acute inhalation toxicity	Acute inhalation toxicity (vapour)		not relevant

Assessment/classification
Harmful if swallowed.

Skin corrosion/irritation

Animal data

Result / Evaluation	Method	Source, Remark
strongly corrosive.	Calculation method.	

Serious eye damage/irritation

Animal data

Result / Evaluation	Method	Source, Remark
strongly corrosive.	Calculation method.	

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

Other information
The mixture is not classified as specific target organ toxicant (single exposure).

Assessment/classification
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

Other information
The mixture is not classified as specific target organ toxicant (repeated exposure).

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

* **Aspiration hazard**

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

11.2 Information on other hazards

Information on other hazards

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties			This product does not contain a substance that has endocrine disrupting properties with respect to humans as no components meets the criteria.

* **Other information**

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).
Inhalation of spray may cause strong respiratory irritation and may cause damage to mucous membranes/lung.
Causes severe burns.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

	Effective dose	Method,Evaluation	Source, Remark
Acute (short-term) fish toxicity	LC50: 212 mg/L	calculated.	
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea	EC50 45 mg/L	calculated.	After neutralization there is a reduction in the harmfulness: EC50(Daphnia, calculated, after neutralization): 432mg/l.
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	EC50 1.6 mg/L	calculated.	After neutralization there is a reduction in the harmfulness: EC50(Algae, calculated, after neutralization): 383mg/l.
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	not determined		

Assessment/classification
Toxic to aquatic life.

12.2 Persistence and degradability

	Value	Method	Source, Remark
Biodegradation	Degradation rate > 70 %		Biodegradable.

	Value	Method	Source, Remark
Biodegradation	Degradation rate 100 %	Neutralization, pH-measurement	Alkaline properties can be eliminated up to 100% by neutralization.
Biodegradation			CAS No1310-58-3 potassium hydroxide Inorganic product which is not eliminable from water through biological cleaning processes.
Biodegradation			CAS No7320-34-5 tetrapotassium pyrophosphate Inorganic product which is not eliminable from water through biological cleaning processes.
Biodegradation	Degradation rate 96 % Test duration 19 d	OECD 301E/ EEC 92/69/V, C.4-B	CAS No102-71-6 triethanolamine [2,2',2''-nitrilotriethanol]

12.3 Bioaccumulative potential

Assessment/classification
tetrapotassium pyrophosphate: Bioaccumulation is improbable.
potassium hydroxide: Accumulation in organisms is not expected.
triethanolamine: Accumulation in organisms is not expected (BCF: <0,4).

12.4 Mobility in soil

Assessment/classification
potassium hydroxide: Dissolves in water. Highly mobile in soil.
tetrapotassium pyrophosphate: moderately mobile in soil (Koc: ~150).
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			This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

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 oxygen demand (COD)	99 mgO2/g		
AOX			The product does not contain any organically bound halogens according to the recipe.

Additional information
Acute aquatic environmental hazards: Aquatic Acute 2 H401: Toxic to aquatic life. After neutralization: not classified as acute hazardous to the aquatic environment.
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
200129 *	detergents containing hazardous substances

Waste code packaging	Waste name
150110 *	packaging containing residues of or contaminated by hazardous substances

* **Appropriate disposal / Product**
Do not dispose with household waste. Do not discharge into the drains.
Dispose of waste according to applicable legislation.

Appropriate disposal / Package
Non-contaminated packages may be recycled.
Handle contaminated packages in the same way as the substance itself.

* **Other disposal recommendations**
Application solution / cleaning solution :
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.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	UN 1814	UN 1814	UN 1814
14.2 UN proper shipping name	POTASSIUM HYDROXIDE SOLUTION	POTASSIUM HYDROXIDE SOLUTION	Potassium hydroxide solution
14.3 Transport hazard class(es)	8	8	8
14.4 Packing group	II	II	II
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)

UN number or ID number	UN 1814
UN proper shipping name	POTASSIUM HYDROXIDE SOLUTION
Transport hazard class(es)	8
Hazard label(s)	8
Classification code	C5
Packing group	II

Environmental hazards	No
Limited quantity (LQ)	1 L
Special provisions	-
Tunnel restriction code	E

Sea transport (IMDG)

UN number or ID number	UN 1814
UN proper shipping name	POTASSIUM HYDROXIDE SOLUTION
Transport hazard class(es)	8
Packing group	II
Environmental hazards	No
Limited quantity (LQ)	1 L
Marine pollutant	No
EmS	F-A, S-B

Air transport (ICAO-TI / IATA-DGR)

UN number or ID number	UN 1814
UN proper shipping name	Potassium hydroxide solution
Transport hazard class(es)	8
Packing group	II
Environmental hazards	No

* 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 3 - not relevant if used as directed.
Regulation (EC) No 1907/2006 (REACH), Annex XVII No 75 - not relevant if used as directed.

Restrictions of occupation
Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

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 0 %

15.2 Chemical Safety Assessment

National regulations

For this mixture a chemical safety assessment were not 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)
DNEL: derived no-effect level
DOC: Dissolved Organic Carbon
EmS: emergency procedures
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization
JArbSchG: Youth Labor Protection Act (DE)
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
SCL: Specific concentration limit
TI: Technical Instruction
TRGS: Technical Rules for Hazardous Substances
VOC: Volatile organic compounds
vPvB: very persistent, very bioaccumulative
Met. Corr. 1: Corrosive to metals, Category 1
Acute Tox. 3, H301: Acute Toxicity (oral), Category 3
Acute Tox. 4, H302: Acute Toxicity (oral), Category 4
Skin Corr. 1A: Skin corrosion, Sub-category 1A
Eye Dam. 1: Serious eye damage, Category 1
Eye Irrit. 2: Eye irritation, Category 2

Key literature references and sources for data
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)

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

Indication of changes
* Data changed compared with the previous version