

## Safety Data Sheet

### KERAPOXY comp.B

Safety Data Sheet dated: 04/02/2020 - version 2



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

### 1.1. Product identifier

Mixture identification:

Trade name: KERAPOXY comp.B

Trade code: 904599

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

Recommended use: Hardener for epoxy products

Uses advised against: Data not available

### 1.3. Details of the supplier of the safety data sheet

Company: MAPEI U.K. Ltd - Mapei House Steel Park Road

Halesowen - West Midlands B62 8HD

www.mapei.co.uk (office hour 8:30-17:30)

Responsible: sicurezza@mapei.it

### 1.4. Emergency telephone number

call NHS 111 or a doctor/OHES Environmental Ltd +44(0)1684 299 886

phone: +44(0)121 508 6970 - fax: +44(0)121 5086 960

## SECTION 2: Hazards identification



### 2.1. Classification of the substance or mixture

#### Regulation (EC) n. 1272/2008 (CLP)

Skin Corr. 1B Causes severe skin burns and eye damage.

Eye Dam. 1 Causes serious eye damage.

Skin Sens. 1 May cause an allergic skin reaction.

Aquatic Acute 1 Very toxic to aquatic life.

Aquatic Chronic 1 Very toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

### 2.2. Label elements

#### Regulation (EC) n. 1272/2008 (CLP)

#### Pictograms and Signal Words



Danger

#### Hazard statements:

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

#### Precautionary statements:

P261 Avoid breathing mist/vapours/spray.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

3

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

8

P310 Immediately call a POISON CENTER.

P391 Collect spillage.

**Contains:**

Fatty acids C18 unsat, reaction products  
with tetraethylenepentamine

3-aminomethyl-3,5,5-  
trimethylcyclohexylamine

3-Aminopropyldimethylamine

**Special provisions according to Annex XVII of REACH and subsequent amendments:**

None

**2.3. Other hazards**

No PBT/vPvB Ingredients are present

Other Hazards: No other hazards

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**SECTION 3: Composition/information on ingredients****3.1. Substances**

N.A.

**3.2. Mixtures**

Mixture identification: KERAPOXY comp.B

**Hazardous components within the meaning of the CLP regulation and related classification:**

Quantity	Name	Ident. Numb.	Classification	Registration Number
≥75 - <100 %	Fatty acids C18 unsat, reaction products with tetraethylenepentamine	CAS:1226892-45-0 EC:629-725-6	Skin Corr. 1C, H314; Aquatic Acute 1, H400; Skin Sens. 1, H317; Aquatic Chronic 1, H410	01-2119487006-38-xxxx
≥5 - <10 %	3-aminomethyl-3,5,5-trimethylcyclohexylamine	CAS:2855-13-2 EC:220-666-8 Index:612-067-00-9	Acute Tox. 4, H312; Acute Tox. 4, H302; Skin Corr. 1B, H314; Eye Dam. 1, H318; Skin Sens. 1, H317; Aquatic Chronic 3, H412	01-2119514687-32-xxxx
≥5 - <10 %	Phenol, styrenated	CAS:61788-44-1 EC:262-975-0	Aquatic Chronic 2, H411	01-2119979575-18-XXXX
≥1 - <2.5 %	N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine	CAS:10563-29-8 EC:234-148-4	Acute Tox. 4, H302; Skin Corr. 1A, H314; Skin Sens. 1B, H317	01-2119970376-29-XXXX

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**SECTION 4: First aid measures****4.1. Description of first aid measures**

In case of skin contact:

Immediately take off all contaminated clothing.  
OBTAIN IMMEDIATE MEDICAL ATTENTION.  
Remove contaminated clothing immediately and dispose of safely.  
After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

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

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and the hazard label.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

**4.2. Most important symptoms and effects, both acute and delayed**

Eye irritation  
Eye damages  
Skin Irritation  
Erythema

**4.3. Indication of any immediate medical attention and special treatment needed**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

(see paragraph 4.1)

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**SECTION 5: Firefighting measures****5.1. Extinguishing media**

Suitable extinguishing media:

Water.

Carbon dioxide (CO<sub>2</sub>).

Extinguishing media which must not be used for safety reasons:

None in particular.

## 5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

## 5.3. Advice for firefighters

Use suitable breathing apparatus.

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## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

### 6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Limit leakages with earth or sand.

### 6.3. Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand

Retain contaminated washing water and dispose it.

### 6.4. Reference to other sections

See also section 8 and 13

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

### 7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

### 7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Predicted No Effect Concentration (PNEC) values

Component	CAS-No.	PNEC LIMIT	Exposure Route	Exposure Frequency	Remark
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2	0,06 mg/l	Fresh Water		
		0,006 mg/l	Marine water		
		0,23 mg/l	Intermittent release		
		5,784 mg/kg	Freshwater sediments		
		0,578 mg/kg	Marine water sediments		
		1,121	Soil		

			mg/kg	
		3,18 mg/l	Microorganisms in sewage treatments	
Phenol, styrenated	61788-44-1	0,001 mg/l	Fresh Water	
		65778 mg/kg	Marine water sediments	
		65778 mg/kg	Freshwater sediments	
		0,17 mg/l	Microorganisms in sewage treatments	
		31525 mg/kg	Soil	
N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine	10563-29-8	0,0092 mg/l	Fresh Water	
		0,00092 mg/l	Marine water	
		0,092 mg/l	Intermittent release	
		18,1 mg/l	Microorganisms in sewage treatments	
		0,0336 mg/kg	Freshwater sediments	

#### Derived No Effect Level. (DNEL)

Component	CAS-No.	Worker Industr y	Worker Profess ional	Consu mer	Exposure Route	Exposure Frequency	Remark
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2	20,1 mg/m3			Human Inhalation		
Phenol, styrenated	61788-44-1	11,02 mg/m3		2,717 mg/m3	Human Inhalation	Long Term, systemic effects	
		6,25 mg/kg		3,125 mg/kg	Human Dermal	Long Term, systemic effects	
				1,562 mg/kg	Human Oral	Long Term, systemic effects	
N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine	10563-29-8	3,7 mg/m3		0,65 mg/m3	Human Inhalation	Long Term, systemic effects	
		7,5 mg/m3			Human Inhalation	Short Term, systemic effects	
		3,7 mg/m3		0,65 mg/m3	Human Inhalation	Long Term, local effects	
		0,67 mg/kg			Human Dermal	Long Term, systemic effects	
				0,2 mg/kg	Human Oral	Long Term, systemic effects	

#### 8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Suitable materials for safety gloves; EN 374:

Polychloroprene - CR: thickness  $\geq 0,5\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .

Nitrile rubber - NBR: thickness  $\geq 0,35\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .

Butyl rubber - IIR: thickness  $\geq 0,5\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .

Fluorinated rubber - FKM: thickness  $\geq 0,4\text{mm}$ ; breakthrough time  $\geq 480\text{min}$ .

Neoprene gloves are suggested (0,5 mm) not recommended gloves: not waterproof gloves

Respiratory protection:

Personal Protective Equipment should comply with relevant CE standards (as EN 374 for gloves and EN 166 for goggles), correctly maintained and stored. Consult the supplier to check the suitability of equipment against specific chemicals and for user information.

Hygienic and Technical measures

N.A.

Appropriate engineering controls:

N.A.

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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state: Liquid

Appearance and colour: Liquid light brown

Odour: ammonia

Odour threshold: N.A.

pH: 11.00

Melting point / freezing point: N.A.

Initial boiling point and boiling range: N.A.

Flash point: 100 °C (212 °F)

Evaporation rate: N.A.

Upper/lower flammability or explosive limits: N.A.

Vapour density: N.A.

Vapour pressure: 0.01

Relative density: 1.10 g/cm<sup>3</sup>

Solubility in water: partly soluble

Partition coefficient (n-octanol/water): N.A. - This product is a mixture

Auto-ignition temperature: N.A. - No explosive or spontaneous ignition in contact with air at room temperature

Decomposition temperature: N.A.

Viscosity: 900.00 cPs

Explosive properties: == - No components with explosive properties

Oxidizing properties: N.A. - No component with oxidizing properties

Solid/gas flammability: N.A.

### 9.2. Other information

No additional information

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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions

### 10.2. Chemical stability

Stable under normal conditions

### 10.3. Possibility of hazardous reactions

None.

### 10.4. Conditions to avoid

Stable under normal conditions.

### 10.5. Incompatible materials

None in particular.

### 10.6. Hazardous decomposition products

None.

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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Toxicological information of the mixture:

There is no toxicological data available on the mixture. Consider the individual concentration of

each component to assess toxicological effects resulting from exposure to the mixture.

#### Toxicological information on main components of the mixture:

Fatty acids C18 unsat, reaction products with tetraethylenepentamine	a) acute toxicity	LD50 Oral > 2000 mg/kg
3-aminomethyl-3,5,5-trimethylcyclohexylamine	a) acute toxicity	LC50 Inhalation Dust Rat > 5,01 mg/l 4h  LD50 Oral Rat = 1030 mg/kg LD50 Skin Rat > 2000 mg/kg LD50 Oral Rat = 1030 mg/kg
Phenol, styrenated	a) acute toxicity	LC50 Inhalation Vapour Mouse = 158,3 mg/l 4h LD50 Oral Rat > 2500 mg/kg LD50 Skin Rat > 2000 mg/kg LD50 Skin Rabbit > 7940 mg/kg LC50 Inhalation Rat > 2,5 mg/l 6h LD50 Oral Rat 2100 mg/kg
N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine	a) acute toxicity	LD50 Oral Rat = 1670 mg/kg
	b) skin corrosion/irritation	Skin Corrosive Skin Rabbit Positive
	d) respiratory or skin sensitisation	Skin Sensitization Skin Positive

**If not differently specified, the information required in Regulation (EU)2015/830 listed below must be considered as N.A.**

- a) acute toxicity
- b) skin corrosion/irritation
- c) serious eye damage/irritation
- d) respiratory or skin sensitisation
- e) germ cell mutagenicity
- f) carcinogenicity
- g) reproductive toxicity
- h) STOT-single exposure
- k) Toxicological kinetics, metabolism and distribution information
- i) STOT-repeated exposure
- j) aspiration hazard

## SECTION 12: Ecological information

### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

Very toxic to aquatic organisms.

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

#### List of components with eco-toxicological properties

Component	Ident. Numb.	Ecotox Infos
3-aminomethyl-3,5,5-trimethylcyclohexylamine	CAS: 2855-13-2 - EINECS: 220-666-8 - INDEX: 612-067-00-9	a) Aquatic acute toxicity : LC50 Fish = 110 mg/L 96  a) Aquatic acute toxicity : EC50 Daphnia = 23 mg/L 48

- a) Aquatic acute toxicity : EC50 Daphnia = 388 mg/L 48
- a) Aquatic acute toxicity : EC50 Algae > 50 mg/L 72
- b) Aquatic chronic toxicity : NOEC Daphnia = 3 mg/L - 21 d
- a) Aquatic acute toxicity : EC50 Daphnia magna 14,6 mg/L 48h EPA
- a) Aquatic acute toxicity : EC50 Algae *Desmodesmus subspicatus* = 37 mg/L 72h IUCLID

Phenol, styrenated

CAS: 61788-44-1 - EINECS: 262-975-0

- a) Aquatic acute toxicity : EC50 Daphnia = 4,6 mg/L 48

- a) Aquatic acute toxicity : EC50 Algae = 9,7 mg/L 72
- a) Aquatic acute toxicity : LC50 Fish = 5,6 mg/L 96

N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine

CAS: 10563-29-8 - EINECS: 234-148-4

- a) Aquatic acute toxicity : LC50 Fish = 215 mg/L 96

- a) Aquatic acute toxicity : EC50 Daphnia = 9,2 mg/L 48
- a) Aquatic acute toxicity : EC50 Algae = 21 mg/L 72

## 12.2. Persistence and degradability

N.A.

## 12.3. Bioaccumulative potential

N.A.

## 12.4. Mobility in soil

N.A.

## 12.5. Results of PBT and vPvB assessment

No PBT/vPvB Ingredients are present

## 12.6. Other adverse effects

N.A.

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

A waste code according to European waste catalogue (EWC) cannot be specified, due to dependence on the usage. Contact an authorized waste disposal service.

Product:

Do not dispose of waste into sewers.

Do not contaminate ponds, waterways or ditches with chemical or used container.

Send to an authorized waste disposal service.

Contaminated packaging:

Empty remaining content.

Dispose of as unused product.

Do not re-use empty containers.

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## SECTION 14: Transport information

### 14.1. UN number

2735

### 14.2. UN proper shipping name

ADR-Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (isophoronediamine solution)

IATA-Technical name: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (isophoronediamine solution)

IMDG-Technical name: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (isophoronediamine solution)

### 14.3. Transport hazard class(es)

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

### 14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

#### 14.5. Environmental hazards

Marine pollutant: Yes

Environmental Pollutant: Yes

#### 14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 8

ADR-Hazard identification number: NA

ADR-Special Provisions: 274

ADR-Transport category (Tunnel restriction code): 3 (E)

Air (IATA):

IATA-Passenger Aircraft: 852

IATA-Cargo Aircraft: 856

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisions: A3 A803

Sea (IMDG):

IMDG-Stowage Code: Category A

IMDG-Stowage Note: SG35

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 223 274

IMDG-Page: N/A

IMDG-Label: N/A

IMDG-EMS: F-A, S-B

IMDG-MFAG: N/A

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

N.A.

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### SECTION 15: Regulatory information

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

VOC (2004/42/EC) : N.A. g/l

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EU) 2015/830

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1	Lower-tier threshold (tonnes)	Upper-tier threshold (tonnes)
Products belongs to category E1	100	200

#### German Water Hazard Class

N.A.

#### Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3, 40



Restrictions related to the substances contained: None

**SVHC Substances:**

No Data Available

MAL-kode: 00-5 (1993) A+B: 00-5 (1993)

**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for the mixture.

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**SECTION 16: Other information**

Code	Description
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
3.1/4/Dermal	Acute Tox. 4	Acute toxicity (dermal), Category 4
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1A	Skin Corr. 1A	Skin corrosion, Category 1A
3.2/1B	Skin Corr. 1B	Skin corrosion, Category 1B
3.2/1C	Skin Corr. 1C	Skin corrosion, Category 1C
3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1B	Skin Sens. 1B	Skin Sensitisation, Category 1B
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/C2	Aquatic Chronic 2	Chronic (long term) aquatic hazard, category 2
4.1/C3	Aquatic Chronic 3	Chronic (long term) aquatic hazard, category 3

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:**

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
3.2/1B	Calculation method
3.3/1	Calculation method
3.4.2/1	Calculation method
4.1/A1	Calculation method
4.1/C1	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This SDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand  
 CAS: Chemical Abstracts Service (division of the American Chemical Society).  
 CAV: Poison Center  
 CE: European Community  
 CLP: Classification, Labeling, Packaging.  
 CMR: Carcinogenic, Mutagenic and Reprotoxic  
 COD: Chemical Oxygen Demand  
 COV: Volatile Organic Compound  
 CSA: Chemical Safety Assessment  
 CSR: Chemical Safety Report  
 DMEL: Derived Minimal Effect Level  
 DNEL: Derived No Effect Level.  
 DPD: Dangerous Preparations Directive  
 DSD: Dangerous Substances Directive  
 EC50: Half Maximal Effective Concentration  
 ECHA: European Chemicals Agency  
 EINECS: European Inventory of Existing Commercial Chemical Substances.  
 ES: Exposure Scenario  
 GefStoffVO: Ordinance on Hazardous Substances, Germany.  
 GHS: Globally Harmonized System of Classification and Labeling of Chemicals.  
 IARC: International Agency for Research on Cancer  
 IATA: International Air Transport Association.  
 IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).  
 IC50: half maximal inhibitory concentration  
 ICAO: International Civil Aviation Organization.  
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).  
 IMDG: International Maritime Code for Dangerous Goods.  
 INCI: International Nomenclature of Cosmetic Ingredients.  
 IRCCS: Scientific Institute for Research, Hospitalization and Health Care  
 KSt: Explosion coefficient.  
 LC50: Lethal concentration, for 50 percent of test population.  
 LD50: Lethal dose, for 50 percent of test population.  
 LDLo: Leathal Dose Low  
 N.A.: Not Applicable  
 N/A: Not Applicable  
 N/D: Not defined/ Not available  
 NA: Not available  
 NIOSH: National Institute for Occupational Safety and Health  
 NOAEL: No Observed Adverse Effect Level  
 OSHA: Occupational Safety and Health Administration.  
 PBT: Persistent, Bioaccumulative and Toxic  
 PGK: Packaging Instruction  
 PNEC: Predicted No Effect Concentration.  
 PSG: Passengers  
 RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.  
 STEL: Short Term Exposure limit.  
 STOT: Specific Target Organ Toxicity.  
 TLV: Threshold Limiting Value.  
 TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).  
 vPvB: Very Persistent, Very Bioaccumulative.  
 WGK: German Water Hazard Class.

**Paragraphs modified from the previous revision:**

- 2. HAZARDS IDENTIFICATION
- 3. COMPOSITION/INFORMATION ON INGREDIENTS
- 5. FIRE-FIGHTING MEASURES
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 9. PHYSICAL AND CHEMICAL PROPERTIES
- 11. TOXICOLOGICAL INFORMATION
- 12. ECOLOGICAL INFORMATION
- 13. DISPOSAL CONSIDERATIONS
- 15. REGULATORY INFORMATION
- 16. OTHER INFORMATION