

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

Printing date 01.04.2020

Version number 8

Revision: 01.04.2020

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

· **1.1 Product identifier**

· **Trade name** **BRAWO-I (Komponente B)**

· **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**  
*Epoxy sealing  
Hardening agent/ Curing agent*

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

· **Manufacturer/Supplier:** *KOB GmbH  
BRAWOLINER - Sanierungssysteme  
Lauterstraße 50  
D-67752 Wolfstein  
Germany*

*Tel: +49(0)631-205 61 100*

*Fax: +49(0)631-205 61 101*

· **Informing department:** *Technische Abteilung  
msds@brawoliner.de*

· **1.4 Emergency telephone number:** *+49 (0) 61 31 - 19 240 (Giftnotruf Mainz)*

### SECTION 2: Hazards identification

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

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

Acute Tox. 4	H302	Harmful if swallowed.
Skin Corr. 1A	H314	Causes severe skin burns and eye damage.
Eye Dam. 1	H318	Causes serious eye damage.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Repr. 2	H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.
Aquatic Chronic 3	H412	Harmful 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 CLP regulation.*

· **Hazard pictograms**



GHS05 GHS07 GHS08

· **Signal word**

*Danger*

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- **Hazard-determining components of labelling:** 3-aminomethyl-3,5,5-trimethylcyclohexylamine  
2-piperazin-1-ylethylamine  
Amine polymer  
Polyoxypropylentriamin  
1,3-Cyclohexanedimethanamine
- **Hazard statements**
  - H302 Harmful if swallowed.
  - H314 Causes severe skin burns and eye damage.
  - H317 May cause an allergic skin reaction.
  - H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements**
  - P260 Do not breathe dusts or mists.
  - P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P310 Immediately call a POISON CENTER/doctor.
  - P321 Specific treatment (see on this label).
  - P362+P364 Take off contaminated clothing and wash it before reuse.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture consisting of the following components.

· **Dangerous components:**

EC number: 949-140-2	Amine polymer Eye Dam. 1, H318; Skin Irrit. 2, H315; Skin Sens. 1B, H317	25-50%
CAS: 2855-13-2 EINECS: 220-666-8	3-aminomethyl-3,5,5-trimethylcyclohexylamine Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	25-50%
CAS: 39423-51-3	Polyoxypropylentriamin Skin Corr. 1B, H314; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Acute Tox. 4, H312	≥5-<25%
CAS: 140-31-8 EINECS: 205-411-0	2-piperazin-1-ylethylamine Acute Tox. 3, H311; Repr. 2, H361fd; STOT RE 1, H372; Skin Corr. 1B, H314; Acute Tox. 4, H302; Skin Sens. 1, H317; Aquatic Chronic 3, H412	≥5-<10%

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CAS: 15520-10-2 EINECS: 239-556-6	2-methylpentane-1,5-diamine Skin Corr. 1A, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	≥5-<10%
CAS: 2579-20-6 EINECS: 219-941-5	1,3-Cyclohexanedimethanamine Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317	≥1-<5%
CAS: 100-51-6 EINECS: 202-859-9	Benzyl alcohol Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	<5%
CAS: 69-72-7 EINECS: 200-712-3	Salicylic acid Repr. 2, H361d; Eye Dam. 1, H318; Acute Tox. 4, H302	≥1-<3%

· **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**

Instantly remove any clothing soiled by the product.  
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 and call for doctor for safety reasons.  
In case of unconsciousness bring patient into stable side position for transport.

##### · **After skin contact**

Instantly wash with water and soap and rinse thoroughly.

##### · **After eye contact**

Call a doctor immediately.

##### · **After swallowing**

Instantly call for doctor.  
Drink copious amounts of water and provide fresh air. Instantly call for doctor.

#### · 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

#### · 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

### SECTION 5: Firefighting measures

#### · 5.1 Extinguishing media

##### · **Suitable extinguishing agents**

Use fire fighting measures that suit the environment.

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

No further relevant information available.

##### · 5.3 Advice for firefighters

##### · **Protective equipment:**

No special measures required.

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### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**      *Wear protective equipment. Keep unprotected persons away.*
- **6.2 Environmental precautions:**      *Inform respective authorities in case product reaches water or sewage system.*
- **6.3 Methods and material for containment and cleaning up:**      *Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralising agent.  
Dispose of contaminated material as waste according to item 13.  
Ensure adequate ventilation.*
- **6.4 Reference to other sections**      *See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.*

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**      *Store in cool, dry place in tightly closed containers.  
Open and handle container with care.*
- **Information about protection against explosions and fires:**      *No special measures required.*
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**      *No special requirements.*
- **Information about storage in one common storage facility:**      *Not required.*
- **Further information about storage conditions:**      *Keep container tightly sealed.*
- **7.3 Specific end use(s)**      *No further relevant information available.*

### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:**      *No further data; see item 7.*
- **8.1 Control parameters**
- **Components with critical values that require monitoring at the workplace:**      *The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.*

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· <b>DNELs</b>	
<b>2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>	
Oral	DNEL 0.526 mg/kg bw/Tag (ArL)
Inhalative	DNEL 20.1 mg/m <sup>3</sup> (ArL)
<b>39423-51-3 Polyoxypropylentriamin</b>	
Inhalative	DNEL 14 mg/m <sup>3</sup> (ArL)
<b>140-31-8 2-piperazin-1-ylethylamine</b>	
Dermal	DNEL 3.33 mg/kg bw/day (ArL)
Inhalative	DNEL 10.6 mg/m <sup>3</sup> (ArL)
<b>15520-10-2 2-methylpentane-1,5-diamine</b>	
Dermal	DNEL 1.5 mg/kg bw/day (ArL)
Inhalative	DNEL 0.25 mg/m <sup>3</sup> (ArL) 0.5 mg/m <sup>3</sup> (Ark)
<b>2579-20-6 1,3-Cyclohexanedimethanamine</b>	
Inhalative	DNEL 0.00947 mg/m <sup>3</sup> (Workers)
<b>100-51-6 Benzyl alcohol</b>	
Oral	DNEL 4 mg/kg bw/Tag (ArL) 20 mg/kg bw/Tag (Ark)
Dermal	DNEL 8 mg/kg bw/day (ArL) 40 mg/kg bw/day (Ark)
Inhalative	DNEL 22 mg/m <sup>3</sup> (ArL) 110 mg/m <sup>3</sup> (Ark)
· <b>PNECs</b>	
<b>2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>	
PNEC	0.006 mg/l (Mew) 0.06 mg/l (Suw)
PNEC	0.578 mg/kg dwt (Sediment) 5.784 mg/kg dwt (Fresh water sediment)
<b>39423-51-3 Polyoxypropylentriamin</b>	
PNEC	10 mg/l (Sewage Treatment Plant) 0.00044 mg/l (Mew) 0.0044 mg/l (Suw)
PNEC	0.002 mg/kg dwt (Bod) 0.002 mg/kg dwt (Sediment) 0.02 mg/kg dwt (Fresh water sediment)
<b>140-31-8 2-piperazin-1-ylethylamine</b>	
PNEC	250 mg/l (Kla) 0.0058 mg/l (Mew) 0.058 mg/l (Suw)
PNEC	1 mg/kg dwt (Bod)

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	21.5 mg/kg dwt (Sediment) 215 mg/kg dwt (Fresh water sediment)
<b>15520-10-2 2-methylpentane-1,5-diamine</b>	
PNEC	0.042 mg/l (Mew) 0.42 mg/l (Suw)
<b>2579-20-6 1,3-Cyclohexanedimethanamine</b>	
PNEC	0.003 mg/l (Mew)
PNEC	0.033 mg/l (Fresh water)
<b>100-51-6 Benzyl alcohol</b>	
PNEC	0.527 mg/l (Marine water sediment) 0.1 mg/l (Mew) 1 mg/l (Fresh water sediment)
PNEC	0.456 mg/kg dwt (Bod) 5.27 mg/kg dwt (Fresh water sediment)

- **Additional information:** *The lists that were valid during the compilation were used as basis.*
- **8.2 Exposure controls**
- **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.*
- **Protection of hands:** *Protective gloves.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation  
After use of gloves apply skin-cleaning agents and skin cosmetics.*
- **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.*
- **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 protection:** *Safety glasses  
Tightly sealed safety glasses.*
- **Body protection:** *Protective work clothing.*

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### SECTION 9: Physical and chemical properties

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

##### · General Information

##### · Appearance:

· <b>Form:</b>	Fluid
· <b>Colour:</b>	Whitish
· <b>Smell:</b>	Amine-like

##### · Change in condition

· <b>Melting point/freezing point:</b>	Not determined
· <b>Initial boiling point and boiling range:</b>	232 °C

· **Flash point:** 110 °C

· **Ignition temperature:** 380 °C

· **Self-inflammability:** Product is not selfigniting.

· **Explosive properties:** Product is not explosive.

· **Steam pressure at 20 °C:** 0.1 hPa

· **Density at 20 °C** 0.96 g/cm<sup>3</sup>

##### · Solubility in / Miscibility with

· <b>Water:</b>	Not miscible or difficult to mix
· <b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.

· **10.2 Chemical stability**

· **Thermal decomposition / conditions to be avoided:** No decomposition if used 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:** No dangerous decomposition products known

### SECTION 11: Toxicological information

#### · 11.1 Information on toxicological effects

· **Acute toxicity** Harmful if swallowed.

#### · LD/LC50 values that are relevant for classification:

##### 2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Oral	LD50	1,030 mg/kg (rat)
	NOAEL	250 mg/kg (rat)
Dermal	LD50	1,840 mg/kg (rabbit)

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		>2,000 mg/kg (rat)
<b>39423-51-3 Polyoxypropylentriamin</b>		
Oral	LD50	550 mg/kg (rat)
Dermal	LD50	>1,000 mg/kg (rat)
<b>140-31-8 2-piperazin-1-ylethylamine</b>		
Oral	LD50	2,140 mg/kg (rat)
Dermal	LD50	866 mg/kg (rabbit)
<b>15520-10-2 2-methylpentane-1,5-diamine</b>		
Oral	LD50	1,170 mg/kg (rat)
Dermal	LD50	1,870 mg/kg (rabbit)
Inhalative	LC50/4 h	19.6 mg/l (rat)
<b>2579-20-6 1,3-Cyclohexanedimethanamine</b>		
Oral	LD50	700 mg/kg (rat)
Dermal	LD50	1,700 mg/kg (rat)
<b>100-51-6 Benzyl alcohol</b>		
Oral	LD50	1,230 mg/kg (rat)
	NOAEL 2nd year study	200 mg/kg (mouse)
Dermal	LD50	200 mg/kg (rat)
	LD50	2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>4,178 mg/l (rat)
<b>69-72-7 Salicylic acid</b>		
Oral	LD50	891 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation** Causes serious eye damage.
- **Respiratory or skin sensitisation** May cause an allergic skin reaction.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **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 fertility. Suspected of damaging the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

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### SECTION 12: Ecological information

#### · 12.1 Toxicity

##### · Aquatic toxicity:

##### **2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine**

LC50/96h	110 mg/l (Leucidus idus)
EC50	1,120 mg/l (Pseudomonas putida)
EC50/48h	23 mg/l (Daphnia magna)
NOEC	1.5 mg/l (Desmodesmus subspicatus) 3 mg/l (Daphnia magna)
ErC50/72h	>50 mg/l (Desmodesmus subspicatus)

##### **39423-51-3 Polyoxypropylentriamin**

LC50/96h	>100 mg/l (Oncorhynchus mykiss)
EC50/48h	13 mg/l (Daphnia magna)
ErC50/72h	4.4 mg/l (algae)

##### **140-31-8 2-piperazin-1-ylethylamine**

EC50/72h	>1,000 mg/l (algae)
LC50/96h	2,190 mg/l (fish)

##### **15520-10-2 2-methylpentane-1,5-diamine**

EC50/72h	>100 mg/l (algae)
EC50	1,825 mg/l (fish)
EC50/48h	19.8 mg/l (Daphnia magna)

##### **2579-20-6 1,3-Cyclohexanedimethanamine**

EC50/24h	90 mg/l (Pseudokirchneriella subcapitata)
EC50	90 mg/l (Pseudomonas putida)
LC50/48h	130 mg/l (Leucidus idus)

##### **100-51-6 Benzyl alcohol**

IC50/72h	700 mg/l (algae)
LC50/96h	460 mg/l (Pimephales promelas) 10 mg/l (Lepomis macrochirus)

#### · 12.2 Persistence and degradability

No further relevant information available.

#### · 12.3 Bioaccumulative potential

No further relevant information available.

#### · 12.4 Mobility in soil

No further relevant information available.

#### · Ecotoxicological effects:

##### · Remark:

Toxic for fish

##### · Additional ecological information:

##### · General notes:

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

Do not allow product to reach ground water, water bodies or sewage system.

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- **12.5 Results of PBT and vPvB assessment** *Danger to drinking water if even small quantities leak into soil.*
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*
- **12.6 Other adverse effects** *No further relevant information available.*

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** *Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Waste disposal key number:** 55352  
*Bez.: aliphatische Amine  
Entsorgungshinweise:  
Sonderabfallverbrennung*

#### · European waste catalogue

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 11	waste paint and varnish containing organic solvents or other dangerous substances

- **Uncleaned packagings:**
- **Recommendation:** *Dispose of packaging according to regulations on the disposal of packagings.  
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.*

### SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1760
- **14.2 UN proper shipping name**
- **ADR** 1760 CORROSIVE LIQUID, N.O.S. (ISOPHORONEDIAMINE, Polyoxypropylentriamin)
- **IMDG, IATA** CORROSIVE LIQUID, N.O.S. (ISOPHORONEDIAMINE, Polyoxypropylentriamin)
- **14.3 Transport hazard class(es)**
- **ADR**
- **Class** 8 (C9) Corrosive substances.
- **Label** 8
- **IMDG, IATA**
- **Class** 8 Corrosive substances.

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· <b>Label</b>	8
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	II
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	no No
· <b>14.6 Special precautions for user</b> · <b>Kemler Number:</b> · <b>EMS Number:</b> · <b>Segregation groups</b> · <b>Stowage Category</b> · <b>Stowage Code</b>	Warning: Corrosive substances. 80 F-A, S-B Alkalis A SW2 Clear of living quarters.
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>Transport category</b> · <b>Tunnel restriction code</b>	2 E
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 1760 CORROSIVE LIQUID, N.O.S. ( I S O P H O R O N E D I A M I N E , POLYOXYPROPYLENTRIAMIN), 8, II

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **REGULATION (EC) No 1907/2006 ANNEX XVII**      Conditions of restriction: 3
- **15.2 Chemical safety assessment:**      A Chemical Safety Assessment has not been carried out.

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### SECTION 16: Other information

- **Relevant phrases**
  - H302 Harmful if swallowed.
  - H311 Toxic in contact with skin.
  - H312 Harmful in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H318 Causes serious eye damage.
  - H332 Harmful if inhaled.
  - H361d Suspected of damaging the unborn child.
  - H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
  - H372 Causes damage to organs through prolonged or repeated exposure.
  - H411 Toxic to aquatic life with long lasting effects.
  - H412 Harmful to aquatic life with long lasting effects.
  
- **Department issuing data specification sheet:** Environment protection department.
- **Contact:** Mr. Hemming
- **Abbreviations and acronyms:**
  - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  - ICAO: International Civil Aviation Organisation
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - DNEL: Derived No-Effect Level (REACH)
  - PNEC: Predicted No-Effect Concentration (REACH)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Acute Tox. 4: Acute toxicity - oral – Category 4
  - Acute Tox. 3: Acute toxicity - dermal – Category 3
  - Skin Corr. 1A: Skin corrosion/irritation – Category 1A
  - Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation – Category 1
  - Skin Sens. 1: Skin sensitisation – Category 1
  - Skin Sens. 1B: Skin sensitisation – Category 1B
  - Repr. 2: Reproductive toxicity – Category 2
  - Repr. 2: Reproductive toxicity – Category 2
  - STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
  - STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
  - Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
  - Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
  
- **\* Data compared to the previous version altered.**