

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

Printing date 01.04.2020

Version number 4

Revision: 01.04.2020

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

- **1.1 Product identifier**
- **Trade name** **BRAWO TC (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 resin  
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. 1B 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.
  - Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms**



GHS05 GHS07 GHS09

- **Signal word**

Danger

- **Hazard-determining components of labelling:**

Polyoxypropylentriamin  
3-aminomethyl-3,5,5-trimethylcyclohexylamine  
Polyoxypropylenediamine  
Amine polymer  
2,4,6-Tris-(1-Phenyl-Ethyl) carboic acid

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- **Hazard statements**
  - H302 Harmful if swallowed.
  - H314 Causes severe skin burns and eye damage.
  - H317 May cause an allergic skin reaction.
  - H411 Toxic 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:**

CAS: 39423-51-3	Polyoxypropylentriamin Skin Corr. 1B, H314; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Acute Tox. 4, H312	25-50%
CAS: 9046-10-0	Polyoxypropylenediamine Skin Corr. 1B, H314; Aquatic Chronic 3, H412	25-50%
CAS: 38640-62-9 EINECS: 254-052-6 Reg.nr.: 01-2119565150-48-0000	Diisopropylnaphthalin-Isomere Asp. Tox. 1, H304; Aquatic Chronic 2, H411	≥2.5-<10%
EC number: 949-140-2	Amine polymer Eye Dam. 1, H318; Skin Irrit. 2, H315; Skin Sens. 1B, H317	≥1-<3%
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	≥2.5-<3%
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	≥1-<1.5%
CAS: 61788-44-1 EINECS: 262-975-0	2,4,6-Tris-(1-Phenyl-Ethyl) carboic acid Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Skin Sens. 1, H317	≥0.25-<0.5%

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Additional information

For the wording of the listed hazard phrases refer to section 16.

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### 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.  
Instantly rinse with water.

##### After eye contact

Rinse opened eye for several minutes under running water.  
Seek medical treatment.

##### After swallowing

Rinse out mouth and then drink plenty of water.  
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.

### 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:

No special measures required.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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### 6.4 Reference to other sections

Use neutralising agent.  
Dispose of contaminated material as waste according to item 13.  
Ensure adequate ventilation.

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.

#### DNELs

##### 39423-51-3 Polyoxypropylentriamin

Inhalative	DNEL	14 mg/m <sup>3</sup> (ArL)
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##### 9046-10-0 Polyoxypropylenediamine

Oral	DNEL	0.04 mg/kg bw/Tag (ArL)
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Dermal	DNEL	2.5 mg/kg bw/day (ArL)
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##### 2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine

Oral	DNEL	0.526 mg/kg bw/Tag (ArL)
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Inhalative	DNEL	20.1 mg/m <sup>3</sup> (ArL)
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##### 15520-10-2 2-methylpentane-1,5-diamine

Dermal	DNEL	1.5 mg/kg bw/day (ArL)
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Inhalative	DNEL	0.25 mg/m <sup>3</sup> (ArL) 0.5 mg/m <sup>3</sup> (Ark)
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### · PNECs

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

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)

#### **9046-10-0 Polyoxypropylenediamine**

PNEC	7.5 mg/l (Sewage Treatment Plant) 0.015 mg/l (Fresh water)
PNEC	0.0176 mg/kg dwt (Bod) 0.125 mg/kg dwt (Sediment) 0.132 mg/kg dwt (Fresh water sediment)

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

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)

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

PNEC	0.042 mg/l (Mew) 0.42 mg/l (Suw)
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· **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

#### · Material of gloves

After use of gloves apply skin-cleaning agents and skin cosmetics.  
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.

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- **Penetration time of glove material** *The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.*
- **Eye protection:** *Safety glasses  
Tightly sealed safety glasses.*
- **Body protection:** *Protective work clothing.*

### SECTION 9: Physical and chemical properties

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

##### · General Information

##### · Appearance:

Form:	Fluid
Colour:	Transparent
Smell:	Amine-like

##### · Change in condition

Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined

· Flash point:	> 150 °C
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· Self-inflammability:	Product is not selfigniting.
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· Explosive properties:	Product is not explosive.
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· Density at 20 °C	1.08 g/cm <sup>3</sup>
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##### · Solubility in / Miscibility with

Water:	Not miscible or difficult to mix
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· 9.2 Other information	No further relevant information available.
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### 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.
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### · LD/LC50 values that are relevant for classification:

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

Oral	LD50	550 mg/kg (rat)
Dermal	LD50	>1,000 mg/kg (rat)

#### **9046-10-0 Polyoxypropylenediamine**

Oral	LD50	2,855 mg/kg (Rat)
Dermal	LD50	2,980 mg/kg (Kan)

#### **38640-62-9 Diisopropylnaphthalin-Isomere**

Oral	LD50	>4,000 mg/kg (rat)
Dermal	LD50	>4,000 mg/kg (rat)
Inhalative	LC50 OECD 403	>5.6 mg/l (rat)

#### **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)
		>2,000 mg/kg (rat)

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

Oral	LD50	1,170 mg/kg (rat)
Dermal	LD50	1,870 mg/kg (rabbit)
Inhalative	LC50/4 h	19.6 mg/l (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 (carcinogenicity, 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** Based on available data, the classification criteria are not met.

· **STOT-single exposure** Based on available data, the classification criteria are not met.

· **STOT-repeated exposure** Based on available data, the classification criteria are not met.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### · 12.1 Toxicity

#### · Aquatic toxicity:

#### **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)

#### **38640-62-9 Diisopropylnaphthalin-Isomere**

EC50/72h	0.15 mg/l (algae)
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LC50/48h	1.7 mg/l (Daphnia magna)
EC50/48h	0.16 mg/l (Daphnia magna)
<b>2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine</b>	
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)
<b>15520-10-2 2-methylpentane-1,5-diamine</b>	
EC50/72h	>100 mg/l (algae)
EC50	1,825 mg/l (fish)
EC50/48h	19.8 mg/l (Daphnia magna)

- **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.
- **Additional ecological information:**
- **General notes:** Must not reach sewage water or drainage ditch undiluted or unneutralised.  
Danger to drinking water if even extremely small quantities leak into soil.
- **12.5 Results of PBT and vPvB assessment**
- **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

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· **Uncleaned packagings:**

· **Recommendation:**

Disposal must be made according to official regulations.

### SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN2735

· **14.2 UN proper shipping name**

· **ADR**

2735 AMINES, LIQUID, CORROSIVE, N.O.S.  
(Polyoxypropylentriamin,  
Polyoxypropylenediamine), ENVIRONMENTALLY  
HAZARDOUS

· **IMDG**

AMINES, LIQUID, CORROSIVE, N.O.S.  
(Polyoxypropylentriamin,  
Polyoxypropylenediamine), MARINE POLLUTANT

· **IATA**

AMINES, LIQUID, CORROSIVE, N.O.S.  
(Polyoxypropylentriamin,  
Polyoxypropylenediamine)

· **14.3 Transport hazard class(es)**

· **ADR**

· **Class**

8 (C7) Corrosive substances.

· **Label**

8

· **IMDG, IATA**

· **Class**

8 Corrosive substances.

· **Label**

8

· **14.4 Packing group**

· **ADR, IMDG, IATA**

III

· **14.5 Environmental hazards:**

· **Marine pollutant:**

no

No

Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **14.6 Special precautions for user**

· **Kemler Number:**

Warning: Corrosive substances.

80

· **EMS Number:**

F-A, S-B

· **Segregation groups**

Alkalis

· **Stowage Category**

A

· **Segregation Code**

SG35 Stow "separated from" SGG1-acids

· **14.7 Transport in bulk according to Annex II  
of Marpol and the IBC Code**

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

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·	Maximum net quantity per outer packaging: 1000 ml
· <b>Transport category</b>	3
· <b>Tunnel restriction code</b>	E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (POLYOXYPROPYLENTRIAMIN, POLYOXYPROPYLENEDIAMINE), 8, III, ENVIRONMENTALLY HAZARDOUS

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
- **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.

### SECTION 16: Other information

- **Relevant phrases**
  - H302 Harmful if swallowed.
  - H304 May be fatal if swallowed and enters airways.
  - 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.
  - 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

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- **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  
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  
Asp. Tox. 1: Aspiration hazard – Category 1  
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.