

## Safety data sheet according to Regulation (EC) No 1907/2006, Article 31

Printing date 11.05.2024

Version number 25 (replaces version 24)

Revision: 08.05.2024

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

- **1.1 Product identifier**
- **Trade name** **BRAWO SRR - Komponente B**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Sector of Use** SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
- **Application of the substance / the mixture** Epoxy curing agent
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** BRAWO SYSTEMS GmbH  
Blechhammerweg 13-17  
67659 Kaiserslautern  
Deutschland/Germany
  
- Tel: +49(0)631-205 61 100
- **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 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 GB CLP regulation.
- **Hazard pictograms**

GHS05 GHS07
- **Signal word** Danger
- **Hazard-determining components of labelling:** 1,3-Cyclohexanedimethanamine  
polymer amine terminated  
Benzyl alcohol  
2,4,6-Tris-(1-Phenyl-Ethyl) carboic acid
- **Hazard statements** H302 Harmful if swallowed.

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**Precautionary statements**

H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H412 Harmful to aquatic life with long lasting effects.  
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 Mixtures**

**Description:** Mixture consisting of the following components.

**Dangerous components:**

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; Aquatic Chronic 3, H412	30-60%
CAS: 61788-44-1 EINECS: 262-975-0	2,4,6-Tris-(1-Phenyl-Ethyl) carbolic acid Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Skin Sens. 1, H317	≥10-<25%
EC number: 949-140-2	polymer amine terminated Eye Dam. 1, H318; Skin Irrit. 2, H315; Skin Sens. 1B, H317	10-30%
CAS: 100-51-6	Benzyl alcohol Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2, H319	<10%
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** Remove contaminated clothing immediately. Consult a doctor if symptoms occur. Move affected person to fresh air.  
**After inhalation** Supply fresh air; seek medical advice if symptoms occur.  
If unconscious, place in recovery position and seek medical advice.  
**After skin contact** In case of contact with skin, wash carefully with plenty of soap and water. Consult a doctor in case of skin reactions.

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- **After eye contact** *Rinse opened eye for several minutes under running water.  
Call a doctor immediately*
- **After swallowing** *Rinse mouth with water. Never give anything by mouth to an unconscious person. DO NOT induce vomiting. If symptoms persist, consult a doctor.*
- **4.2 Most important symptoms and effects, both acute and delayed** *Advice for the doctor: Elementary aid, decontamination, symptomatic treatment.*

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** *CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.*
- **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:** *Inform respective authorities in case product reaches water or sewage system.  
Dilute with much water.*
- **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** *Open and handle containers with care.  
Ventilation measures are required in rooms without sufficient air exchange (e.g. closed rooms),  
because the occupational exposure limit values (see chapter 8)*

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could be exceeded. This must be avoided.  
Wear suitable personal protective equipment (see section 8). Avoid contact with eyes, skin and clothing. Change contaminated or damaged gloves and contaminated clothing immediately and wash skin immediately. Mix slowly, partially covering the mixing container. Pour carefully and slowly when repotting. Observe the BGBau technical data sheet and practical guide for handling epoxy resins.

- **Information about protection against explosions and fires:** Ensure sufficient air exchange and/or extraction in the working areas. Take precautionary measures to avoid electrostatic discharges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Further information about storage conditions:** Keep container tightly closed in a well-ventilated place.
- **Storage class** 8A

### SECTION 8: Exposure controls/personal protection

- **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**

**CAS: 2579-20-6 1,3-Cyclohexanedimethanamine**

Inhalative	DNEL	0.00947 mg/m <sup>3</sup> (Workers)
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**CAS: 100-51-6 Benzyl alcohol**

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)

· **PNECs**

**CAS: 2579-20-6 1,3-Cyclohexanedimethanamine**

PNEC	0.003 mg/l (Mew)
PNEC	0.033 mg/l (Fresh water)

**CAS: 100-51-6 Benzyl alcohol**

PNEC	0.527 mg/l (Marine water sediment)
	0.1 mg/l (Mew)

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	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**
- **Appropriate engineering controls** *No further data; see section 7.*
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures** *Keep away from food, drink and animal feed.  
Remove soiled, soaked clothing immediately.  
Wash hands before breaks and at the end of work.  
Avoid contact with eyes and skin.*
- **Breathing equipment:** *If workplace limit values cannot be complied with by ventilation measures or if rooms cannot be technically ventilated, respiratory protection must be worn: Use combination filter A1-P2 (brown/white) in rooms that cannot be ventilated. If oxygen deficiency is expected, use self-contained breathing apparatus. Observe wearing time limits according to §9 (3) GefStoffV in conjunction with BGR 190.*
- **Hand protection** *Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*
- **Material of gloves** *You can find help with choosing gloves on the website <https://www.bgbau.de/fileadmin/Gisbau/Projekte.pdf>  
For example, we recommend the Sol-vex 37-900 protective gloves from Ansell GmbH. The breakthrough time of the protective gloves can be found under point 8 "Penetration time of the glove material".  
The selection of a suitable glove depends not only on the material, but also on other quality features and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of glove materials cannot be calculated in advance and must therefore be checked before use.  
Nitrile rubber  
Recommended material thickness:  $\geq 0.4$  mm*
- **Penetration time of glove material** *The breakthrough times of the Sol-vex 37-900 protective gloves are around 8 hours.  
The following applies to all other gloves:  
The exact breakthrough time must be obtained from the protective glove manufacturer and adhered to.  
Nitrile rubber  
Material thickness:  $\geq 0.40$  mm  
Penetration time:  $\geq 480$  min  
Butyl rubber:  
Material thickness:  $\geq 0.5$  mm  
Penetration time:  $\geq 480$  min*
- **Eye/face protection** *Tight-fitting safety goggles.  
Safety goggles.*

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- **Body protection:** *Protective clothing*  
*Suitable protective clothing should be worn when working with epoxy resins. In addition to normal work clothing (long trousers, long-sleeved shirt or T-shirt), disposable overalls, aprons, overshoes, sleeve protectors etc. may be necessary depending on the activity. Uncovered areas of skin should be avoided as far as possible, even in hot weather. If the work involves kneeling, the lower leg area should be protected by protective trousers.*

### SECTION 9: Physical and chemical properties

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

##### · General Information

- **Physical state** *Fluid*
- **Colour:** *Yellowish*
- **Smell:** *Amine-like*
- **Odour threshold:** *Not determined.*
- **Melting point/freezing point:** *Not determined*
- **Boiling point or initial boiling point and boiling range** *220 °C (CAS: 2579-20-6 1,3-Cyclohexanedimethanamine)*
- **Flammability** *Not applicable.*
- **Lower and upper explosion limit**
- **Lower:** *Not determined.*
- **Upper:** *Not determined.*
- **Flash point:** *≥61 °C*
- **Decomposition temperature:** *Not determined.*
- **pH at 20 °C** *12*
- **Viscosity:**
- **Kinematic viscosity** *Not determined.*
- **dynamic at 20 °C:** *290 mPas*
- **Solubility**
- **Water:** *Partly miscible*
- **Partition coefficient n-octanol/water (log value)** *Not determined.*
- **Steam pressure at 20 °C:** *0 hPa (polymer amine terminated)*
- **Density and/or relative density**
- **Density at 20 °C** *1.02 g/cm<sup>3</sup>*
- **Relative density** *Not determined.*
- **Vapour density** *Not determined.*

#### · 9.2 Other information

- **Appearance:**
- **Form:** *Fluid*
- **Important information on protection of health and environment, and on safety.**
- **Self-inflammability:** *Product is not selfigniting.*
- **Explosive properties:** *Product is not explosive.*

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- **Change in condition**
- **Evaporation rate** Not determined.

- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Void
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** stable
- **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 hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful if swallowed.

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

**CAS: 2579-20-6 1,3-Cyclohexanedimethanamine**

Oral	LD50	700 mg/kg (rat)
Dermal	LD50	1700 mg/kg (rat)

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**CAS: 100-51-6 Benzyl alcohol**

Oral	LD50	1230 mg/kg (rat)
	NOAEL 2nd year study	200 mg/kg (mouse) 200 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)
Inhalative	LC50/4 h	>4178 mg/l (rat)

**CAS: 69-72-7 salicylic acid**

Oral	LD50	891 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)

· **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.

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**

CAS: 61788-44-1	2,4,6-Tris-(1-Phenyl-Ethyl) carboic acid	List II
CAS: 69-72-7	salicylic acid	List II; III

### SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

**CAS: 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)

**CAS: 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.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Endocrine disrupting properties** For information on endocrine disrupting properties see section 11.

· **12.7 Other adverse effects**

· **Remark:** Harmful to fish

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· **Additional ecological information:**

· **General notes:**

*Harmful to aquatic organisms*

*Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous. Must not reach sewage water or drainage ditch undiluted or unneutralised.*

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

*Danger to drinking water if even small quantities leak into soil.*

### 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*

· **Uncleaned packagings:**

· **Recommendation:**

*Disposal must be made according to official regulations.*

· **Recommended cleaning agent:**

*Water, if necessary with cleaning agent.*

### SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR, IMDG, IATA**

*UN2735*

· **14.2 UN proper shipping name**

· **ADR, IMDG, IATA**

*AMINES, LIQUID, CORROSIVE, N.O.S. (1,3-Cyclohexanedimethanamine)*

· **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**

*II*

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· <b>14.5 Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>14.6 Special precautions for user</b> <i>Warning: Corrosive substances.</i>	
· <b>Kemler Number:</b>	80
· <b>EMS Number:</b>	F-A, S-B
· <b>Segregation groups</b>	(SGG18) Alkalis
· <b>Stowage Category</b>	A
· <b>Segregation Code</b>	SG35 Stow "separated from" SGG1-acids
· <b>14.7 Maritime transport in bulk according to IMO instruments</b> <i>Not applicable.</i>	
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Limited quantities (LQ)</b>	1L
· <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>Transport category</b>	2
· <b>Tunnel restriction code</b>	E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	1L
· <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· <b>UN "Model Regulation":</b>	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (1,3-CYCLOHEXANEDIMETHANAMINE), 8, II

### SECTION 15: Regulatory information

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

· **Regulated explosives precursors**

None of the ingredients is listed.

· **Regulated poisons**

None of the ingredients is listed.

· **Reportable explosives precursors**

None of the ingredients is listed.

· **Reportable poisons**

None of the ingredients is listed.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I**

None of the ingredients is listed.

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**15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

**Relevant phrases**

H302 Harmful if swallowed.  
 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.  
 H319 Causes serious eye irritation.  
 H332 Harmful if inhaled.  
 H361d Suspected of damaging the unborn child.  
 H411 Toxic to aquatic life with long lasting effects.  
 H412 Harmful to aquatic life with long lasting effects.

**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 relatif au transport international 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 (UK REACH)  
 PNEC: Predicted No-Effect Concentration (UK 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 – Category 4  
 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  
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2  
 Skin Sens. 1: Skin sensitisation – Category 1  
 Skin Sens. 1B: Skin sensitisation – Category 1B  
 Repr. 2: Reproductive toxicity – 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.