

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022



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

- **1.1 Product identifier**
- **Trade name** **BRAWO SRR - Komponente A**
- **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**
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
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 GB CLP regulation.
- **Hazard pictograms**

GHS07 GHS09
- **Signal word** Warning
- **Hazard-determining components of labelling:** epoxide derivates
2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane polymers and homologues, molecular weight < 700
1,6-hexene-diglycidylether
maleic anhydride
oxirane, mono[(C12-14-alkyloxy)methyl] derivs
- **Hazard statements** H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H411 Toxic to aquatic life with long lasting effects.

(Contd. on page 2)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name **BRAWO SRR - Komponente A**

(Contd. of page 1)

- **Precautionary statements**
 - P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 - P273 Avoid release to the environment.
 - P280 Wear protective gloves / eye protection / face protection.
 - P305+P351+P338 **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 - P337+P313 If eye irritation persists: Get medical advice/attention.
- **Additional information:** Contains epoxy constituents. May produce an allergic reaction.
- **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: 1675-54-3 EINECS: 216-823-5	epoxide derivates Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	50-70%
CAS: 9003-36-5 NLP: 500-006-8	2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane polymers and homologues, molecular weight < 700 Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	25-50%
CAS: 16096-31-4 EINECS: 240-260-4	1,6-hexene-diglycidylether Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 3, H412	≥2.5-<10%
CAS: 68609-97-2 EINECS: 271-846-8	oxirane, mono[(C12-14-alkyloxy)methyl] derivs Skin Irrit. 2, H315; Skin Sens. 1, H317	≥0.1-<0.5%

- **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**
- **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** Seek medical treatment.
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
- **After swallowing** Rinse out mouth and then drink plenty of water.
Seek medical treatment.

(Contd. on page 3)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name **BRAWO SRR - Komponente A**

(Contd. of page 2)

- **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** CO₂, 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** Not required.
- **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).
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 container with care.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **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.

(Contd. on page 4)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name BRAWO SRR - Komponente A

(Contd. of page 3)

- **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

- **8.1 Control parameters**
- **Additional information about design of technical systems:** No further data; see item 7.
- **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**

16096-31-4 1,6-hexene-diglycidylether

Dermal	DNEL	2.8 mg/kg bw/day (ArL)
Inhalative	DNEL	4.9 mg/m ³ (ArL)

68609-97-2 oxirane, mono[(C12-14-alkyloxy)methyl] derivs

Oral	DNEL	1 mg/kg bw/Tag (ArL)
Dermal	DNEL	1.7 mg/kg bw/day (ArL)
Inhalative	DNEL	0.98 mg/m ³ (ArL)

· **PNECs**

16096-31-4 1,6-hexene-diglycidylether

PNEC	0.0115 mg/l (Fresh water)
	0.00115 mg/l (Mew)
PNEC	0.223 mg/kg dwt (Bod)
	0.0283 mg/kg dwt (Sediment)
	0.283 mg/kg dwt (Fresh water sediment)

68609-97-2 oxirane, mono[(C12-14-alkyloxy)methyl] derivs

PNEC	0.00072 mg/l (Mew)
	0.0072 mg/l (Suw)
PNEC	80.12 mg/kg dwt (Bod)
	6.677 mg/kg dwt (Sediment)
	66.77 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.

- **Breathing equipment:** Not required.

(Contd. on page 5)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name **BRAWO SRR - Komponente A**

(Contd. of page 4)

- **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:** Impervious protective clothing
Protective work clothing.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

- **Form:** Fluid
- **Colour:** Whitish
- **Smell:** Characteristic
- **Odour threshold:** Not determined.

· **pH-value:** Mixture is non-soluble (in water).

· Change in condition

- **Melting point/freezing point:** Not determined
- **Initial boiling point and boiling range:** >200 °C

· **Flash point:** >93 °C

· **Inflammability (solid, gaseous)** Not applicable.

· **Ignition temperature:** 460 °C

· **Decomposition temperature:** Not determined.

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

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

· Critical values for explosion:

- **Lower:** Not determined.
- **Upper:** Not determined.

· **Steam pressure at 20 °C:** 0 hPa

- **Density at 20 °C** 1.1 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.
- **Evaporation rate** Not determined.

(Contd. on page 6)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name **BRAWO SRR - Komponente A**

(Contd. of page 5)

- | | |
|--|--|
| · Solubility in / Miscibility with Water: | Fully miscible |
| · Partition coefficient: n-octanol/water: | Not determined. |
| · Viscosity: | |
| dynamic: | Not determined. |
| kinematic: | Not determined. |
| · 9.2 Other information | No further relevant information available. |

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 toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

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

1675-54-3 epoxide derivatives

Dermal	LD50	23,000 mg/kg (rabbit)
--------	------	-----------------------

9003-36-5 2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane polymers and homologues, molecular weight < 700

Oral	LD50	>2,000 mg/kg (rat)
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Dermal	LD50	>2,000 mg/kg (rabbit)
--------	------	-----------------------

16096-31-4 1,6-hexene-diglycidylether

Oral	LD50	>8,500 mg/kg (rat)
------	------	--------------------

Dermal	LD50	>4,900 mg/kg (rat)
--------	------	--------------------

68609-97-2 oxirane, mono[(C12-14-alkyloxy)methyl] derivs

Oral	LD50	17,100 mg/kg (rat)
------	------	--------------------

- **Primary irritant effect:**
- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** May cause an allergic skin reaction.
- **Additional toxicological information:**
- **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.

(Contd. on page 7)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name **BRAWO SRR - Komponente A**

(Contd. of page 6)

- **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:

1675-54-3 epoxide derivates

IC50	>42.6 mg/l (Bak)
LC50/96h	2 mg/l (Oncorhynchus mykiss)
EC50/48h	1.8 mg/l (Daphnia magna)
ErC50/72h	11 mg/l (Selenastrum capricornutum)

9003-36-5 2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane polymers and homologues, molecular weight < 700

LC50/96h	>100 mg/l (Daphnia magna)
EC50/96h	>100 mg/l (Leucidus idus)

16096-31-4 1,6-hexene-diglycidylether

LC50/96h	30 mg/l (Leucidus idus)
EC50/48h	47 mg/l (Daphnia magna)

68609-97-2 oxirane, mono[(C12-14-alkyloxy)methyl] derivs

EbC50/72h	843 mg/l (Pseudokirchneriella subcapitata)
LC50/96h	>5,000 mg/l (Oncorhynchus mykiss) 1,800 mg/l (Lepomis macrochirus)
EC50	>100 mg/l (BEL)
NOEC	500 mg/l (Pseudokirchneriella subcapitata)

· 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:

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.
Danger to drinking water if even 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.

GB

(Contd. on page 8)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name **BRAWO SRR - Komponente A**

(Contd. of page 7)

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.*

- **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.*

- **Recommended cleaning agent:** *Water, if necessary with cleaning agent.*

SECTION 14: Transport information

- | | |
|---|---|
| · 14.1 UN-Number
· ADR, IMDG, IATA | UN3082 |
| · 14.2 UN proper shipping name
· ADR, IATA | <i>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxide derivates, epoxide derivates)</i> |
| · IMDG | <i>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxide derivates, epoxide derivates), MARINE POLLUTANT</i> |
| · 14.3 Transport hazard class(es) | |
| · ADR
· Class | <i>9 (M6) Miscellaneous dangerous substances and articles.</i> |
| · Label | <i>9</i> |
| · IMDG, IATA
· Class | <i>9 Miscellaneous dangerous substances and articles.</i> |
| · Label | <i>9</i> |
| · 14.4 Packing group
· ADR, IMDG, IATA | <i>III</i> |
| · 14.5 Environmental hazards: | <i>Product contains environmentally hazardous substances: epoxide derivates</i> |
| · Marine pollutant: | <i>Yes</i> |
| · Special marking (ADR): | <i>Symbol (fish and tree)</i> |
| · Special marking (IATA): | <i>Symbol (fish and tree)</i> |
| · 14.6 Special precautions for user | <i>Warning: Miscellaneous dangerous substances and articles.</i> |
| · Kemler Number: | <i>90</i> |
| · EMS Number: | <i>F-A,S-F</i> |

(Contd. on page 9)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name **BRAWO SRR - Komponente A**

(Contd. of page 8)

· Stowage Category	A
· 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 Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	(-)
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (EPOXIDE DERIVATES, EPOXIDE DERIVATES), 9, III

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
· Directive 2012/18/EU	
· Named dangerous substances - ANNEX I	None of the ingredients is listed.
· Seveso category	E2 Hazardous to the Aquatic Environment
· Qualifying quantity (tonnes) for the application of lower-tier requirements	200 t
· Qualifying quantity (tonnes) for the application of upper-tier requirements	500 t
· 15.2 Chemical safety assessment:	A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

· Relevant phrases	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. 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)

(Contd. on page 10)

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

Printing date 08.11.2022

Version number 4

Revision: 08.11.2022

Trade name BRAWO SRR - Komponente A

(Contd. of page 9)

*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**Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Irrit. 2: Serious eye damage/eye irritation – Category 2**Skin Sens. 1: Skin sensitisation – 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*