

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

Printing date 14.01.2022

Version number 9



Revision: 14.01.2022

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

- **1.1 Product identifier**
- **Trade name** **BRAWO TC - Komponente A**
- **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*
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** *BRAWO SYSTEMS GmbH  
Blechhammerweg 13-17  
67659 Kaiserslautern  
Deutschland/Germany*
- **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 CLP regulation.*
- **Hazard pictograms**

GHS07 GHS09
- **Signal word** *Warning*
- **Hazard-determining components of labelling:** *Propyl -2,2-diphenyl-4,4'dipropyloxirane polymers and homologues molecular weight < 700  
2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane polymers and homologues, molecular weight < 700  
oxirane, mono[(C12-14-alkyloxy)methyl] derivs  
1,6-hexene-diglycidylether  
maleic anhydride*
- **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.*

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- **Precautionary statements**
    - P101 *If medical advice is needed, have product container or label at hand.*
    - P102 *Keep out of reach of children.*
    - P103 *Read carefully and follow all instructions.*
    - 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.*
    - P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*
  - **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	<i>bis[4-(2,3-epoxypropoxy)phenyl]propane</i> <i>Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317</i>	<i>50-70%</i>
CAS: 9003-36-5 NLP: 500-006-8	<i>2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane polymers and homologues, molecular weight &lt; 700</i> <i>Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317</i>	<i>≥10-&lt;25%</i>
CAS: 68609-97-2 EINECS: 271-846-8	<i>oxirane, mono[(C12-14-alkyloxy)methyl] derivs</i> <i>Skin Irrit. 2, H315; Skin Sens. 1, H317</i>	<i>≥1-&lt;3%</i>
CAS: 16096-31-4 EINECS: 240-260-4	<i>1,6-hexene-diglycidylether</i> <i>Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 3, H412</i>	<i>≥1-&lt;1.5%</i>

- **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** *Void*  
*Instantly wash with water and soap and rinse thoroughly.*

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- **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.
- **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 clothing.
- **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).  
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.

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- **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

- **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

##### 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 <sup>3</sup> (ArL)

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

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

#### · PNECs

##### 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)

##### 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)

- **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.

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- **Protection of hands:** Wash hands during breaks and at the end of the work.  
Avoid contact with the eyes and skin.  
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.
- **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:** Pasty
- **Colour:** Green
- **Smell:** Characteristic

· **pH-value:** Not applicable.

##### · Change in condition

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

· **Flash point:** 151 °C

· **Ignition temperature:** 184 °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** 1.23 g/cm<sup>3</sup>

##### · Solubility in / Miscibility with

· **Water:** Not miscible or difficult to mix

· **9.2 Other information** No further relevant information available.

### SECTION 10: Stability and reactivity

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

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- **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** Based on available data, the classification criteria are not met.

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

**1675-54-3 bis[4-(2,3-epoxypropoxy)phenyl]propane**

Dermal	LD50	23000 mg/kg (rabbit)
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**9003-36-5 2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane polymers and homologues, molecular weight < 700**

Oral	LD50	>2000 mg/kg (rat)
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Dermal	LD50	>2000 mg/kg (rabbit)
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**68609-97-2 oxirane, mono[(C12-14-alkyloxy)methyl] derivs**

Oral	LD50	17100 mg/kg (rat)
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**16096-31-4 1,6-hexene-diglycidylether**

Oral	LD50	>8500 mg/kg (rat)
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Dermal	LD50	>4900 mg/kg (rat)
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- **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.
- **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 bis[4-(2,3-epoxypropoxy)phenyl]propane**

IC50	>42.6 mg/l (Bak)
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LC50/96h	2 mg/l (Oncorhynchus mykiss)
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EC50/48h	1.8 mg/l (Daphnia magna)
ErC50/72h	11 mg/l (Selenastrum capricornutum)
<b>9003-36-5 2,2'-[methylenebis(p-phenyleneoxymethylene)]bisoxirane polymers and homologues, molecular weight &lt; 700</b>	
LC50/96h	>100 mg/l (Daphnia magna)
EC50/96h	>100 mg/l (Leucidus idus)
<b>68609-97-2 oxirane, mono[(C12-14-alkyloxy)methyl] derivs</b>	
EbC50/72h	843 mg/l (Pseudokirchneriella subcapitata)
LC50/96h	>5000 mg/l (Oncorhynchus mykiss) 1800 mg/l (Lepomis macrochirus)
EC50	>100 mg/l (BEL)
NOEC	500 mg/l (Pseudokirchneriella subcapitata)
<b>16096-31-4 1,6-hexene-diglycidylether</b>	
LC50/96h	30 mg/l (Leucidus idus)
EC50/48h	47 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.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:** Toxic for aquatic organisms  
Also poisonous for fish and plankton in water bodies.  
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.

### 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:** 55903  
Bez.: Harzrückstände, nicht ausgehärtet  
Entsorgungshinweise:  
Sonderabfallverbrennung

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- **Uncleaned packagings:**
- **Recommendation:** *Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.*

### SECTION 14: Transport information

<ul style="list-style-type: none"> <li>· <b>14.1 UN-Number</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	UN3082
<ul style="list-style-type: none"> <li>· <b>14.2 UN proper shipping name</b></li> <li>· <b>ADR, IATA</b></li> <li>· <b>IMDG</b></li> </ul>	<p><i>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxide derivates)</i></p> <p><i>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (epoxide derivates), MARINE POLLUTANT</i></p>
<ul style="list-style-type: none"> <li>· <b>14.3 Transport hazard class(es)</b></li> <li>· <b>ADR</b></li> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p><i>9 (M6) Miscellaneous dangerous substances and articles.</i></p> <p><i>9</i></p>
<ul style="list-style-type: none"> <li>· <b>IMDG, IATA</b></li> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>	<p><i>9 Miscellaneous dangerous substances and articles.</i></p> <p><i>9</i></p>
<ul style="list-style-type: none"> <li>· <b>14.4 Packing group</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	<i>III</i>
<ul style="list-style-type: none"> <li>· <b>14.5 Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> <li>· <b>Special marking (ADR):</b></li> <li>· <b>Special marking (IATA):</b></li> </ul>	<p><i>Product contains environmentally hazardous substances: epoxide derivates</i></p> <p><i>Yes</i></p> <p><i>Symbol (fish and tree)</i></p> <p><i>Symbol (fish and tree)</i></p> <p><i>Symbol (fish and tree)</i></p>
<ul style="list-style-type: none"> <li>· <b>14.6 Special precautions for user</b></li> <li>· <b>Kemler Number:</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Stowage Category</b></li> </ul>	<p><i>Warning: Miscellaneous dangerous substances and articles.</i></p> <p><i>90</i></p> <p><i>F-A,S-F</i></p> <p><i>A</i></p>
<ul style="list-style-type: none"> <li>· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b></li> </ul>	<i>Not applicable.</i>
<ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> <li>· <b>ADR</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> <li>· <b>Transport category</b></li> </ul>	<p><i>5L</i></p> <p><i>Code: E1</i></p> <p><i>Maximum net quantity per inner packaging: 30 ml</i></p> <p><i>Maximum net quantity per outer packaging: 1000 ml</i></p> <p><i>3</i></p>

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· <b>Tunnel restriction code</b>	(-)
· <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 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (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**
- **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.
- **Department issuing data specification sheet:** Environment protection department.
- **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 (REACH)  
PNEC: Predicted No-Effect Concentration (REACH)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic

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*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***\* Data compared to the  
previous version altered.**

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