

Safety Data Sheet acc. to OSHA HCS

Printing date 02/22/2024

Reviewed on 02/08/2024

1 Identification

- **Product identifier**
- **Trade name:** **BRAWO SRR US (component B)**
- **Application of the substance / the mixture** Epoxy curing agent
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:** KUZE
Kunststoff und Zement
Systemtechnik GmbH
Maxstraße 10
45127 Essen, Germany
Tel.: +49 176 10 625 103
E-Mail: info@kuze-sys.de
- **Information department:** info@kuze-sys.de
- **Emergency telephone number:** Tel.: +49 / (0)700 24112112 (MCR)
Tel.: +1 872 5888271 (MCR)

2 Hazard(s) identification

- **Classification of the substance or mixture**
- Flammable Liquids 4 H227 Combustible liquid.
- Acute Toxicity - Oral 4 H302 Harmful if swallowed.
- Skin Corrosion 1B H314 Causes severe skin burns and eye damage.
- Eye Damage 1 H318 Causes serious eye damage.
- Sensitization - Skin 1 H317 May cause an allergic skin reaction.
- Toxic to Reproduction 2 H361 Suspected of damaging fertility or the unborn child.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS05 GHS07 GHS08

- **Signal word**

Danger

- **Hazard-determining components of labeling:**

1,3-cyclohexanedimethanamine
Salicylic acid
Benzyl alcohol
2,4,6-Tris-(1-Phenyl-Ethyl) carboic acid

- **Hazard statements**

Combustible liquid.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.

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· Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from flames and hot surfaces. – No smoking.
Do not breathe dusts or mists.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
IF exposed or concerned: Get medical advice/attention.
Specific treatment.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
In case of fire: Use CO₂, powder or water spray to extinguish.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system

· NFPA ratings (scale 0-4)

Health = 3
Fire = 2
Reactivity = 0

· Other hazards

· Results of PBT and vPvB assessment

· PBT: Not applicable.
· vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description: Mixture consisting of the following components.

· Dangerous components:

CAS: 2579-20-6	1,3-cyclohexanedimethanamine	30-60%
CAS: 61788-44-1	2,4,6-Tris-(1-Phenyl-Ethyl) carboic acid	10-30%
CAS: 100-51-6	Benzyl alcohol	<10%
CAS: 69-72-7	Salicylic acid	≥1-<3%

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· **Additional information** (Contd. of page 2)
For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

- **Description of first aid measures**
- **General information** *Immediately remove any clothing contaminated with 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 to be sure call for a doctor. In case of unconsciousness place patient stably in side position for transportation.*
- **After skin contact** *Immediately wash with water and soap and rinse thoroughly.*
- **After eye contact** *Seek medical treatment. Rinse opened eye for several minutes under running water. Then consult a doctor.*
- **After swallowing** *Rinse out mouth and then drink plenty of water. Immediately call a doctor. Drink copious amounts of water and provide fresh air. Immediately call a doctor.*

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents** *CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
- **Special hazards arising from the substance or mixture** *No further relevant information available.*
- **Advice for firefighters**
- **Protective equipment:** *No special measures required.*

6 Accidental release measures

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

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See Section 13 for disposal information.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

CAS: 100-51-6	Benzyl alcohol	30 ppm
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· **PAC-2:**

CAS: 100-51-6	Benzyl alcohol	52 ppm
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· **PAC-3:**

CAS: 100-51-6	Benzyl alcohol	740 ppm
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7 Handling and storage

· **Handling**

· **Precautions for safe handling** Open and handle receptacle with care.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.

· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**

· **Storage**

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:** Keep receptacle tightly sealed.

· **Storage class** 8A

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:** The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

CAS: 100-51-6	Benzyl alcohol
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WEEL	Long-term value: 10 ppm
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· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures** Keep away from foodstuffs, beverages and feed.

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> · Breathing equipment: · Protection of hands: · Material of gloves · Penetration time of glove material · Eye protection: · Body protection: | <p><i>Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.</i></p> <p><i>Not required.</i></p> <p><i>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.</i></p> <p><i>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.</i></p> <p><i>The exact breakthrough time must be obtained from the protective glove manufacturer and must be observed.</i></p> <p><i>Tightly sealed goggles.</i></p> <p><i>Impervious protective clothing
Protective work clothing.</i></p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

9 Physical and chemical properties

- | | |
|----------------------------------------------------------------|-----------------------------------------------|
| · Information on basic physical and chemical properties | |
| · General Information | |
| · Appearance: | |
| · Form: | Fluid |
| · Color: | Yellowish |
| · Odor: | Amine-like |
| · Odor threshold: | Not determined. |
| · pH-value at 20 °C (68 °F): | 12 |
| · Change in condition | |
| · Melting point/Melting range: | undetermined |
| · Boiling point/Boiling range: | 220 °C (428 °F) |
| · Flash point: | ≥61 °C (≥141.8 °F) |
| · Flammability (solid, gaseous) | Not applicable. |
| · Decomposition temperature: | Not determined. |
| · Ignition temperature: | Product is not selfigniting. |
| · Danger of explosion: | Product does not present an explosion hazard. |
| · Explosion limits: | |
| · Lower: | Not determined. |
| · Upper: | Not determined. |
| · Vapor pressure at 20 °C (68 °F): | 0 hPa |

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- | | |
|------------------------------------|---------------------------------------|
| · Density at 20 °C (68 °F): | 1.02 g/cm ³ (8.51 lbs/gal) |
| · Relative density | Not determined. |
| · Vapor density | Not determined. |
| · Evaporation rate | Not determined. |

- | | |
|--------------------------------------------------|-----------------|
| · Solubility in / Miscibility with Water: | Partly miscible |
|--------------------------------------------------|-----------------|

- | | |
|---------------------------------------------------|-----------------|
| · Partition coefficient (n-octanol/water): | Not determined. |
|---------------------------------------------------|-----------------|

- | | |
|---------------------------|-----------------|
| · Viscosity: | |
| dynamic at 20 °C (68 °F): | 290 mPas |
| kinematic: | Not determined. |

- **Other information**

No further relevant information available.

10 Stability and reactivity

- | | |
|------------------------------------------------------------|-------------------------------------------------------|
| · Reactivity | No further relevant information available. |
| · Chemical stability | stable |
| · Thermal decomposition / conditions to be avoided: | No decomposition if used according to specifications. |
| · Possibility of hazardous reactions | No dangerous reactions known |
| · Conditions to avoid | No further relevant information available. |
| · Incompatible materials: | No further relevant information available. |
| · Hazardous decomposition products: | No dangerous decomposition products known |

11 Toxicological information

- **Information on toxicological effects**
· **Acute toxicity:**

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

CAS: 2579-20-6 1,3-cyclohexanedimethanamine

Oral	LD50	700 mg/kg (rat)
Dermal	LD50	1,700 mg/kg (rat)

CAS: 100-51-6 Benzyl alcohol

Oral	LD50	1,230 mg/kg (rat)
	NOAEL 2nd year study	200 mg/kg (mouse)
		200 mg/kg (rat)
Dermal	LD50	2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	>4,178 mg/l (rat)

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CAS: 69-72-7 Salicylic acid

Oral	LD50	891 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)

· **Primary irritant effect:**

· **on the skin:**

Caustic effect on skin and mucous membranes.

· **on the eye:**

Strong caustic effect.

· **Sensitization:**

Sensitization possible through skin contact.

· **Additional toxicological information:**

Harmful

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **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)

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Ecotoxicological effects:**

· **Remark:** Harmful to fish

· **Additional ecological information:**

· **General notes:** 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

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aqueous waste, emptied into drains, is only low water-dangerous. Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Harmful to aquatic organisms

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

Danger to drinking water if even small quantities leak into the ground.

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Waste disposal key:**

55352
Bez.: aliphatische Amine
Entsorgungshinweise:
Sonderabfallverbrennung

· **Uncleaned packagings:**

· **Recommendation:**

Disposal must be made according to official regulations.

· **Recommended cleansing agent:**

Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA**

UN2735

· **UN proper shipping name**

· **DOT**

Amines, liquid, corrosive, n.o.s. (1,3-cyclohexanedimethanamine)

· **ADR, IMDG, IATA**

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

· **Transport hazard class(es)**

· **DOT, IMDG, IATA**

· **Class**

8 Corrosive substances

· **Label**

8

· **ADR**

· **Class**

8 (C7) Corrosive substances

· **Label**

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· Packing group · DOT, ADR, IMDG, IATA	II
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Segregation Code	Warning: Corrosive substances 80 F-A, S-B (SGG18) Alkalis A SG35 Stow "separated from" SGG1-acids
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations	On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L
· ADR · Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (1,3-CYCLOHEXANEDIMETHANAMINE), 8, II

15 Regulatory information

· **Safety, health and environmental regulations/ legislation specific for the substance or mixture** *No further relevant information available.*

· **SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

· **SARA Section 313 (specific toxic chemical listings)**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act)**

All components have the value ACTIVE.

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· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Prop 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

· **Contact:**

· **Date of preparation / last revision**

02/22/2024

· **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

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

NFPA: National Fire Protection Association (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Liquids 4: Flammable liquids – Category 4

Acute Toxicity - Oral 4: Acute toxicity – Category 4

Skin Corrosion 1B: Skin corrosion/irritation – Category 1B

Eye Damage 1: Serious eye damage/eye irritation – Category 1

Sensitization - Skin 1: Skin sensitisation – Category 1

Toxic to Reproduction 2: Reproductive toxicity – Category 2

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