



Printing date 09.02.2024 Version number 28 (replaces version 27) Revision: 09.02.2024

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

· 1.1 Product identifier

• Trade name BRAWO RR - 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 sealing

Hardening agent/ 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.

Acute Tox. 4 H312 Harmful in contact with skin.

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.

Repr. 2 H361fd Suspected of damaging fertility. Suspected of damaging the unborn

child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

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 GHS08

· Signal word Danger

· Hazard-determining

components of labelling: Formaldehyde, oligomeric reaction products with 3,3'-

iminodi(propylamine)

1,3-Cyclohexanedimethanamine

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2-piperazin-1-ylethylamine

polymer amine terminated

2,4,6-Tris-(1-Phenyl-Ethyl) carbolic acid

· Hazard statements H302 Harmful if swallowed.

H312 Harmful in contact with skin.

Causes severe skin burns and eye damage. H314

H317 May cause an allergic skin reaction.

H361fd Suspected of damaging fertility. Suspected of damaging

the unborn child.

H373 May cause damage to organs through prolonged or

repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

· 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.

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.

P501 Dispose of contents/container in accordance

with local/regional/national/international

regulations.

· 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: 161278-35-9	Formaldehyde, oligomeric reaction products with 3,3'-iminodi(propylamine)	10-30%
	Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	
EC number: 949-140-2	polymer amine terminated	10-30%
	Eye Dam. 1, H318; Skin Irrit. 2, H315; Skin Sens. 1B, H317	
CAS: 2579-20-6	1,3-Cyclohexanedimethanamine	≥10-<25%
EINECS: 219-941-5	Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	

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Benzyl alcohol	10-30%
Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2, H319	
2-piperazin-1-ylethylamine	≥5-<10%
Repr. 2, H361fd; STOT RE 1, H372; Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	
2,4,6-Tris-(1-Phenyl-Ethyl) carbolic acid Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Skin Sens. 1, H317	≥2.5-<10%
salicylic acid Repr. 2. H361d: Eve Dam. 1. H318: Acute Tox. 4. H302	≥1-<1.5%
	Benzyl alcohol Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2, H319 2-piperazin-1-ylethylamine Repr. 2, H361fd; STOT RE 1, H372; Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412 2,4,6-Tris-(1-Phenyl-Ethyl) carbolic acid Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Skin Sens. 1, H317

· 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 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 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 Call a doctor immediately. Instantly call for doctor. · After swallowing

Drink copious amounts of water and provide fresh air. Instantly call

for doctor.

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

No special measures required. · Protective equipment:

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

· 6.2 Environmental

Wear protective equipment. Keep unprotected persons away.

precautions: sewage system.

Inform respective authorities in case product reaches water or

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· 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 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.

· 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: 257	9-20-6	1,3-Cyclohexanedimethanamine
Inhalative	DNEL	0.00947 mg/m³ (Workers)
CAS: 100-	-51-6 B	enzyl 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/m³ (ArL)
		110 mg/m³ (Ark)
CAS: 140-	-31-8 2-	piperazin-1-ylethylamine
Dermal	DNEL	3.33 mg/kg bw/day (ArL)

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	(Contd. of pag
Inhalat	ive DNEL 10.6 mg/m³ (ArL)
PNEC	3
CAS: 2	2579-20-6 1,3-Cyclohexanedimethanamine
PNEC	0.003 mg/l (Mew)
PNEC	0.033 mg/l (Fresh water)
CAS: 1	100-51-6 Benzyl alcohol
PNEC	0.527 mg/l (Marine water sediment)
	0.1 mg/l (Mew)
	1 mg/l (Fresh water sediment)
PNEC	0.456 mg/kg dwt (Bod)
	5.27 mg/kg dwt (Fresh water sediment)
CAS: 1	140-31-8 2-piperazin-1-ylethylamine
PNEC	250 mg/l (Kla)
	0.0058 mg/l (Mew)
	0.058 mg/l (Freshwater)
PNEC	1 mg/kg dwt (Bod)
	21.5 mg/kg dwt (Sediment)
	215 mg/kg dwt (Fresh water sediment)
· Additio	onal information: The lists that were valid during the compilation were used as ba

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 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.

· Hand protection 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 Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.4 mm

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 breakthrough time must be obtained from the protective

glove manufacturer and must be observed.

• Eye/face protection Tightly sealed safety glasses.

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Body protection: Protective work clothing.

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

Colour: Dark brown
 Smell: Amine-like
 Melting point/freezing point: Not determined

Boiling point or initial boiling point and

boiling range232 °CFlash point:110 °CAuto-ignition temperature:380 °C

PH Not applicable.
Not determined.

· Viscosity:

· Kinematic viscosity
· dynamic:

Not determined.

Not determined.

Solubility

· Water: Not miscible or difficult to mix

· Steam pressure at 20 °C: 0.1 hPa

Density and/or relative density

Density at 20 °C 0.96 g/cm³

· 9.2 Other information

· Appearance:

· Oxidising solids

· Organic peroxides

· Corrosive to metals

· 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.

Void

Void

Void

Information with regard to physical hazard

classes · Explosives Void · Flammable gases Void Void · Aerosols · Oxidising gases Void · Gases under pressure Void · Flammable liquids Void · Flammable solids Void · Self-reactive substances and mixtures Void Void · Pyrophoric liquids Void · Pyrophoric solids Void · Self-heating substances and mixtures · Substances and mixtures, which emit flammable gases in contact with water Void · Oxidising liquids Void

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Void

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Desensitised explosives

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 hazard classes as defined in Regulation (EC) No 1272/2008

· Acute toxicity Harmful if swallowed.

Harmful in contact with skin.

· LD/LC50 v	LD/LC50 values that are relevant for classification:		
CAS: 2579	CAS: 2579-20-6 1,3-Cyclohexanedimethanamine		
Oral	LD50	700 mg/kg (rat)	
Dermal	LD50	1700 mg/kg (rat)	
CAS: 100-	51-6 Benzyl alcohol		
Oral I	LD50	1230 mg/kg (rat)	
1	NOAEL 2nd year study	200 mg/kg (mouse)	
		200 mg/kg (rat)	
Dermal	LD50	2000 mg/kg (rabbit)	
Inhalative I	LC50/4 h	>4178 mg/l (rat)	
CAS: 140-3	31-8 2-piperazin-1-ylet	hylamine	
Oral	LD50	2000-5000 mg/kg (rat)	
		500 mg/kg (rabbit)	
Dermal	LD50	200-1000 mg/kg (rabbit)	
CAS: 69-72	2-7 salicylic acid		
Oral I	LD50	891 mg/kg (rat)	
Dermal	LD50	>2000 mg/kg (rat)	
01-1	-i/ii4-4i	aveca acres alia burga and ava damage	

• 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.

Germ cell mutagenicity
 Carcinogenicity
 Reproductive toxicity
 Based on available data, the classification criteria are not met.
 Suspected of damaging fertility. Suspected of damaging the unborn

child.

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

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May cause damage to organs through prolonged or repeated · STOT-repeated exposure

exposure.

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

· 11.2 Information on other hazards

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

SECTION 12: Ecological information

· 12.1 Toxic	city
· Aquatic to	oxicity:
CAS: 257	9-20-6 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)
CAS: 140-	-31-8 2-piperazin-1-ylethylamine
EC50/72h	>1000 mg/l (algae)

LC50/96h | 2190 mg/l (fish)

· 12.2 Persistence and

No further relevant information available. degradability

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

· 12.6 Endocrine disrupting

properties For information on endocrine disrupting properties see section 11.

· 12.7 Other adverse effects

Toxic for fish · Remark:

· Additional ecological information:

Also poisonous for fish and plankton in water bodies. · General notes:

Toxic for aquatic organisms

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.





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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: Dispose of packaging according to regulations on the disposal of

packagings.

Empty contaminated packagings thoroughly. They can be recycled

after thorough and proper cleaning.

14.1 UN number or ID number ADR, IMDG, IATA	UN1760
14.2 UN proper shipping name ADR, IMDG, IATA	CORROSIVE LIQUID, N.O.S. (Formaldehydoligomeric reaction products with 3, i m i n o d i (propylamine), 1, Cyclohexanedimethanamine)
14.3 Transport hazard class(es)	
ADR Class Label	8 (C9) Corrosive substances. 8
IMDG, IATA Class Label	8 Corrosive substances. 8
14.4 Packing group ADR, IMDG, IATA	11
14.5 Environmental hazards: Marine pollutant:	No
14.6 Special precautions for user Kemler Number: EMS Number: Segregation groups	Warning: Corrosive substances. 80 F-A,S-B (SGG18) Alkalis
Stowage Category Stowage Code	B SW2 Clear of living quarters.
14.7 Maritime transport in bulk accordi IMO instruments	<u> </u>

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· Transport/Additional information:

· ADR

· Limited quantities (LQ) 1L

· Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· Transport category 2 · Tunnel restriction code E

·IMDG

· Limited quantities (LQ) 1L

· Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· UN "Model Regulation": UN 1760 CORROSIVE LIQUID, N.O.S.

(FORMALDEHYDE, OLIGOMERIC REACTION PRODUCTS WITH 3,3'-IMINODI(PROPYLAMINE),

1,3-CYCLOHEXANEDIMETHANAMINE), 8, II

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/ legislation specific for the

substance or mixture No further relevant information available.

· 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.

· 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.

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H361d Suspected of damaging the unborn child.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

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 (UK REACH)

PNEC: Predicted No-Effect Concentration (ÚK 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 Repr. 2: Reproductive toxicity - Category 2

STOT RE 1: Specific target organ toxicity (repeated exposure) - Category 1 STOT RE 2: Specific target organ toxicity (repeated exposure) - 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.