



Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

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

· 1.1 Product identifier

· Trade name BRAWO-I - 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.

Skin Corr. 1A 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.

Aguatic 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 CLP regulation.

· Hazard pictograms







GHS05 GHS07 GHS0

· Signal word Danger

· Hazard-determining

components of labelling: 3-aminomethyl-3,5,5-trimethylcyclohexylamine

2-piperazin-1-ylethylamine polymer amine terminated Polyoxypropylentriamin

1,3-Cyclohexanedimethanamine

(Contd. on page 2)





Version number 14 Revision: 14.01.2022 Printing date 14.01.2022

Trade name BRAWO-I - Komponente B

		(Contd. of page 1)
· Hazard statements	H302 Harmful i	` ' ' '
	H314 Causes s	severe skin burns and eye damage.
		se an allergic skin reaction.
		ed of damaging fertility. Suspected of damaging
	the unbo	
	H373 May cau	use damage to organs through prolonged or
	repeated	exposure.
	H412 Harmful t	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+P35	33 IF ON SKIN (or hair): Take off immediately all
		contaminated clothing. Rinse skin with water [or
		shower].
	P305+P351+P33	88 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 Chemical characterisation: Mixtures

· Description: Mixture consisting of the following components.

	polymer amine terminated	25-50%
	Eye Dam. 1, H318; Skin Irrit. 2, H315; Skin Sens. 1B, H317	
CAS: 2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	25-50%
EINECS: 220-666-8	Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	
CAS: 39423-51-3	Polyoxypropylentriamin Skin Corr. 1B, H314; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Acute Tox. 4, H312	≥5-<25%
CAS: 140-31-8	2-piperazin-1-ylethylamine	≥5-<10%
EINECS: 205-411-0	Acute Tox. 3, H311; Repr. 2, H361fd; STOT RE 1, H372; Skin Corr. 1B, H314; Acute Tox. 4, H302; Skin Sens. 1, H317; Aquatic Chronic 3, H412	
CAS: 15520-10-2	2-methylpentane-1,5-diamine	≥5-<10%
EINECS: 239-556-6	Skin Corr. 1A, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

	(Cor	ntd. of page 2)
CAS: 2579-20-6	1,3-Cyclohexanedimethanamine	≥1-<5%
EINECS: 219-941-5	Skin Corr. 1B, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317	
CAS: 100-51-6	Benzyl alcohol	<5%
EINECS: 202-859-9	Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 69-72-7	salicylic acid	≥1-<3%
EINECS: 200-712-3	Repr. 2, H361d; Eye Dam. 1, H318; Acute Tox. 4, H302	
· Additional informat	tion For the wording of the listed hazard phrases refer to sec	tion 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

• General information Instantly remove any clothing soiled by 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 contactAfter swallowingCall a doctor immediately.Instantly call for doctor.

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

for doctor.

· 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

emergency procedures Wear protective equipment. Keep unprotected persons away. **6.2 Environmental**

precautions: Inform respective authorities in case product reaches water or

sewage system.

(Contd. on page 4)





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

(Contd. of page 3)

· 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.

· 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	DNELs			
2855-13-2	2855-13-2 3-aminomethyl-3,5,5-trimethylcyclohexylamine			
Oral	DNEL	0.526 mg/kg bw/Tag (ArL)		
Inhalative	halative DNEL 20.1 mg/m³ (ArL)			
39423-51-	39423-51-3 Polyoxypropylentriamin			
Inhalative	Inhalative DNEL 14 mg/m³ (ArL)			
140-31-8	140-31-8 2-piperazin-1-ylethylamine			
Dermal	Dermal DNEL 3.33 mg/kg bw/day (ArL)			
Inhalative	DNEL	10.6 mg/m³ (ArL)		

(Contd. on page 5)





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

15520 4	022	thylnontono 1 E diamina	(Contd. of pa
		thylpentane-1,5-diamine	
Dermal DNEL 1.5 mg/kg bw/day (ArL)			
innaiativ	e DNEL	0.25 mg/m³ (ArL)	
		0.5 mg/m³ (Ark)	
	-	clohexanedimethanamine	
		0.00947 mg/m³ (Workers)	
	6 Benzyl		
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)	
Inhalativ	e DNEL	22 mg/m³ (ArL)	
		110 mg/m³ (Ark)	
PNECs	<u> </u>		
2855-13	-2 3-amii	nomethyl-3,5,5-trimethylcyclohexylamine	
	0.006 mg/		
(0.06 mg/l	(Suw)	
	_	kg dwt (Sediment)	
	_	kg dwt (Fresh water sediment)	
		oxypropylentriamin	
		Ewage Treatment Plant)	
		ng/l (Mew)	
	0.0044 mg		
	-	kg dwt (Bod)	
	_	kg dwt (Sediment)	
	_	g dwt (Fresh water sediment)	
		azin-1-ylethylamine	
	250 mg/l (
	0.0058 m	,	
	0.058 mg/	• •	
	1 mg/kg a		
		g dwt (Sediment)	
	_	g dwt (Fresh water sediment)	
		thylpentane-1,5-diamine	
	0- 2 2- me 0.042 mg/		
).42 mg/l	,	
		clohexanedimethanamine	
	0.003 mg/l (Mew) 0.033 mg/l (Fresh water)		
	6 Benzyl	·	
	-	I (Marine water sediment)	
	_	·	
10).1 mg/l (l	vievv)	





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

(Contd. of page 5)

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

· 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.

• **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. 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 of gloves

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. Protective work clothing.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Body protection:

· Appearance:

Form: Fluid
Colour: Whitish
Smell: Amine-like

· **pH-value:** Not applicable.

· Change in condition

Melting point/freezing point: Not determined

Initial boiling point and boiling range: 247 °C

· Flash point: 83 °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 0.96 g/cm³

(Contd. on page 7)





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

(Contd. of page 6)

· 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.

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
 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 Harmful if swallowed.

2855-13-2	! 3-aminomethyl-3,5,5-ti	rimethylcyclohexylamine
Oral	LD50	1030 mg/kg (rat)
	NOAEL	250 mg/kg (rat)
Dermal	LD50	1840 mg/kg (rabbit)
		>2000 mg/kg (rat)
39423-51-	3 Polyoxypropylentriai	min
Oral	LD50	550 mg/kg (rat)
Dermal	LD50	>1000 mg/kg (rat)
140-31-8	2-piperazin-1-ylethylam	ine
Oral	LD50	2140 mg/kg (rat)
Dermal	LD50	866 mg/kg (rabbit)
15520-10-2 2-methylpentane-1,5-diamine		
Oral	LD50	1170 mg/kg (rat)
Dermal	LD50	1870 mg/kg (rabbit)
Inhalative	LC50/4 h	19.6 mg/l (rat)
2579-20-6	1,3-Cyclohexanedimet	thanamine
Oral	LD50	700 mg/kg (rat)
Dermal	LD50	1700 mg/kg (rat)
100-51-6	Benzyl alcohol	
Oral	LD50	1230 mg/kg (rat)
	NOAEL 2nd year study	200 mg/kg (mouse)

(Contd. on page 8)





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

		(Contd. of page 7)
		200 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rabbit)
Inhalative	LC50/4 h	>4178 mg/l (rat)
69-72-7 s	alicylic acid	
Oral	LD50	891 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)

· Primary irritant effect:

· **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.

Additional toxicological information:

· CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)

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

exposure.

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

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic to	xicity:		
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine		
LC50/96h	110 mg/l (Leucidus idus)		
EC50	1120 mg/l (Pseudomonas putida)		
EC50/48h	23 mg/l (Daphnia magna)		
NOEC	1.5 mg/l (Desmodesmus subspicatus)		
	3 mg/l (Daphnia magna)		
ErC50/72h	>50 mg/l (Desmodesmus subspicatus)		
39423-51-3	Polyoxypropylentriamin		
LC50/96h	>100 mg/l (Oncorhynchus mykiss)		
EC50/48h	13 mg/l (Daphnia magna)		
ErC50/72h	ErC50/72h 4.4 mg/l (algae)		
140-31-8 2-	piperazin-1-ylethylamine		
EC50/72h	>1000 mg/l (algae)		
LC50/96h	2190 mg/l (fish)		
15520-10-2	2-methylpentane-1,5-diamine		
EC50/72h	>100 mg/l (algae)		
EC50	1825 mg/l (fish)		
EC50/48h	EC50/48h 19.8 mg/l (Daphnia magna)		
	(Contd. on page 9)		

GB





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

2579-20-6 1,3-Cyclohexanedimethanamine

EC50/24h | 90 mg/l (Pseudokirchneriella subcapitata) (Contd. of page 8)

EC50 90 mg/l (Pseudomonas putida) LC50/48h 130 mg/l (Leucidus idus)

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.

· Ecotoxical effects:

· Remark: Toxic for fish

· Additional ecological information:

· General notes: Must not reach sewage water or drainage ditch undiluted or

unneutralised.

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.

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.

SECTION 14: Transport information

· 14.1 UN-Number

· ADR, IMDG, IATA UN1760

(Contd. on page 10)





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

	(Contd. of page
14.2 UN proper shipping name ADR, IMDG, IATA	CORROSIVE LIQUID, N.O.S (Polyoxypropylentriamin, ISOPHORONEDIAMINE
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	II .
14.5 Environmental hazards: Marine pollutant:	no No
14.6 Special precautions for user Kemler Number: EMS Number: Stowage Category Stowage Code	Warning: Corrosive substances. 80 F-A,S-B B SW2 Clear of living quarters.
14.7 Transport in bulk according to An of Marpol and the IBC Code	nnex II Not applicable.
Transport/Additional information:	
ADR Limited quantities (LQ) Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 m
Transport category Tunnel restriction code	2 E
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 m
UN "Model Regulation":	UN 1760 CORROSIVE LIQUID, N.O.S (POLYOXYPROPYLENTRIAMIN ISOPHORONEDIAMINE), 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.

(Contd. on page 11)





Printing date 14.01.2022 Version number 14 Revision: 14.01.2022

Trade name BRAWO-I - Komponente B

(Contd. of page 10)

· 15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

· Relevant phrases H302 Harmful if swallowed. H311 Toxic in contact with skin.

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.

H332 Harmful if inhaled.

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 (REACH)

PNEC: Predicted No-Effect Concentration (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 Acute Tox. 3: Acute toxicity - Category 3

Skin Corr. 1A: Skin corrosion/irritation - Category 1A 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

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.