



Version number 26 (replaces version 25) Printing date 09.02.2024 Revision: 09.02.2024

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

· 1.1 Product identifier

· Trade name BRAWO TC - Komponente B

· 1.2 Relevant identified uses of the substance or mixture

No further relevant information available. and uses advised against

· Application of the substance

/ the mixture Epoxy resin

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. 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.

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

Route of exposure: Inhalation.

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









GHS05 GHS07 GHS08 GHS09

· Signal word Danger

· Hazard-determining

components of labelling:

Polyoxypropylentriamin Polyoxypropylenediamine Isophorone diamine crystalline silica

Hydrocarbons, C9-unsaturated, polymerised

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polymer amine terminated

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

· **Hazard statements** H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H373 May cause damage to the lung through prolonged or

repeated exposure. Route of exposure: Inhalation.

H411 Toxic 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

howerl

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: 39423-51-3	Polyoxypropylentriamin Eye Dam. 1, H318; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Acute Tox. 4, H312	30-60%
CAS: 9046-10-0	Polyoxypropylenediamine Skin Corr. 1B, H314; Aquatic Chronic 3, H412	≥25-≤30%
CAS: 14808-60-7	crystalline silica STOT RE 1, H372	<10%
CAS: 38640-62-9 EINECS: 254-052-6 Reg.nr.: 01-2119565150-48- 0000	Diisopropylnaphthalin-Isomere Asp. Tox. 1, H304; Aquatic Chronic 1, H410	≥2.5-<5%
EC number: 949-140-2	polymer amine terminated Eye Dam. 1, H318; Skin Irrit. 2, H315; Skin Sens. 1B, H317	≥1-<3%

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		(Contd. of page 2
CAS: 2855-13-2	Isophorone diamine	≥2.5-<3%
EINECS: 220-666-8 Reg.nr.: 01-2119514687-32	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: 71302-83-5	Hydrocarbons, C9-unsaturated, polymerised	≥1-<2.5%
EC number: 701-299-7	Asp. Tox. 1, H304; Skin Sens. 1A, H317; Aquatic Chronic 3, H412	
CAS: 15520-10-2 EINECS: 239-556-6	2-methylpentane-1,5-diamine Skin Corr. 1A, H314; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; STOT SE 3, H335	≥1-<1.5%
CAS: 61788-44-1	2,4,6-Tris-(1-Phenyl-Ethyl) carbolic acid	≥0.25-<0.5%
EINECS: 262-975-0	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.

Instantly rinse with water.

• After eye contact Rinse opened eye for several minutes under running water.

Seek medical treatment.

· After swallowing Rinse out mouth and then drink plenty of water.

Instantly call for doctor.

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

• **Protective equipment:** No special measures required.

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### SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and

emergency procedures

Wear protective equipment. Keep unprotected persons away.

· 6.2 Environmental

precautions:

No special measures required.

· 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: 39423-51-3 Polyoxypropylentriamin

Inhalative DNEL 14 mg/m³ (ArL)

CAS: 9046-10-0 Polyoxypropylenediamine

Oral DNEL 0.04 mg/kg bw/Tag (ArL)
Dermal DNEL 2.5 mg/kg bw/day (ArL)

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CAC	2055 42 2	(Contd. of		
	2855-13-2 Isophorone diamine			
		0.526 mg/kg bw/Tag (ArL)		
		20.1 mg/m³ (ArL)		
		2 2-methylpentane-1,5-diamine		
Derma		1.5 mg/kg bw/day (ArL)		
Inhalat	ive DNEL	0.25 mg/m³ (ArL)		
		0.5 mg/m³ (Ark)		
PNEC	s			
CAS:	3 <b>9423-51-</b> 3	3 Polyoxypropylentriamin		
PNEC	10 mg/l (S	Sewage Treatment Plant)		
	0.00044 n	ng/l (Mew)		
	0.0044 mg	g/l (Freshwater)		
PNEC	0.002 mg/	0.002 mg/kg dwt (Bod)		
	0.002 mg/	02 mg/kg dwt (Sediment)		
0.02 mg/kg dwt (Fresh water sediment)		g dwt (Fresh water sediment)		
CAS:	9046-10-0	Polyoxypropylenediamine		
PNEC	7.5 mg/l (S	Sewage Treatment Plant)		
	0.015 mg/	/l (Fresh water)		
PNEC	0.0176 mg	g/kg dwt (Bod)		
	0.125 mg/	/kg dwt (Sediment)		
	0.132 mg/kg dwt (Fresh water sediment)			
CAS: 2	2855-13-2	Isophorone diamine		
PNEC	0.006 mg/	(Mew)		
	0.06 mg/l (Freshwater)			
PNEC	0.578 mg/kg dwt (Sediment)			
5.784 mg/kg dwt (Fresh water sediment)				
CAS:	15520-10-2	2 2-methylpentane-1,5-diamine		
PNEC	0.042 mg/	(Mew)		
	0.42 mg/l	(Freshwater)		

8.2 Exposure controls
Appropriate engineering

controls No further data: see section 7.

· Individual protection measures, such as personal protective equipment

General protective and

· Material of gloves

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.

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

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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. · Body protection: Protective work clothing.

### **SECTION 9: Physical and chemical properties**

· 9.1 Information on basic physical and chemical properties

· General Information

· Colour: Whitish · Smell: Characteristic Melting point/freezing point: Not determined

· Boiling point or initial boiling point and

boiling range Not determined · Flash point: >150 °C · pH Not applicable.

Not determined.

· Viscosity:

· Kinematic viscosity Not determined. · dynamic: Not determined.

· Solubility

Not miscible or difficult to mix · Water:

Not determined. · Steam pressure:

Density and/or relative density

1.08 g/cm3 · Density at 20 °C

· 9.2 Other information

· Appearance:

· 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.

· Information with regard to physical hazard

classes

· Explosives Void · Flammable gases Void · Aerosols Void · Oxidising gases Void · Gases under pressure Void · Flammable liquids Void Flammable solids Void · Self-reactive substances and mixtures Void · Pyrophoric liquids Void · Pyrophoric solids Void Self-heating substances and mixtures Void

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· Substances and mixtures, which emit	
flammable gases in contact with water	Void
· Oxidising liquids	Void
Oxidising solids	Void
· Organic peroxides	Void
Corrosive to metals	Void
· Desensitised explosives	Void

# **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

		Harmful if swallowed.	
LD/LC50 values that are relevant for classification:			
CAS: 394	23-51-3 Polyoxyp	ropylentriamin	
Oral	LD50	550 mg/kg (rat)	
Dermal	LD50	>1000 mg/kg (rat)	
CAS: 9046-10-0 Polyoxypropylenediamine			
Oral	LD50	2855 mg/kg (Rat)	
Dermal	LD50	2980 mg/kg (Kan)	
CAS: 38640-62-9 Diisopropylnaphthalin-Isomere			
Oral	LD50	>4000 mg/kg (rat)	
Dermal	LD50	>4000 mg/kg (rat)	
Inhalative	LC50 OECD 403	>5.6 mg/l (rat)	
CAS: 285	5-13-2 Isophoron	e diamine	
Oral	LD50	1030 mg/kg (ATE)	
		1030 mg/kg (rat)	
	NOAEL	250 mg/kg (rat)	
Dermal	LD50	1840 mg/kg (rabbit)	
		>2000 mg/kg (rat)	
CAS: 155	20-10-2 2-methylp	pentane-1,5-diamine	
Oral	LD50	1170 mg/kg (rat)	
Dermal	LD50	1870 mg/kg (rabbit)	
Inhalative	LC50/4 h	19.6 mg/l (rat)	

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

exposure. Route of exposure: Inhalation.

• 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

### **SECTION 12: Ecological information**

· 12.1 Toxicity

	A -	45 -	4	
•	AΩ	uatic	TOX	ICITV:

#### CAS: 39423-51-3 Polyoxypropylentriamin

LC50/96h >100 mg/l (Oncorhynchus mykiss)

EC50/48h 13 mg/l (Daphnia magna)

ErC50/72h 4.4 mg/l (algae)

#### CAS: 38640-62-9 Diisopropylnaphthalin-Isomere

EC50/72h 0.15 mg/l (algae)

LC50/48h 1.7 mg/l (Daphnia magna) EC50/48h 0.16 mg/l (Daphnia magna)

## CAS: 2855-13-2 Isophorone diamine

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)

#### CAS: 15520-10-2 2-methylpentane-1,5-diamine

EC50/72h >100 mg/l (algae) EC50 1825 mg/l (fish)

EC50/48h | 19.8 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.

· 12.5 Results of PBT and vPvB assessment · PBT: Not applicable. · vPvB: Not applicable.

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12.6 Endocrine disrupting

**properties** For information on endocrine disrupting properties see section 11.

· 12.7 Other adverse effects

· Additional ecological information:

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

unneutralised.

Danger to drinking water if even extremely small quantities leak

into soil.

## **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: Disposal must be made according to official regulations.

14.1 UN number or ID number ADR, IMDG, IATA	UN2735
14.2 UN proper shipping name	
ADR	AMINES, LIQUID, CORROSIVE, N.O. (Polyoxypropylenediamine), ENVIRONMENTAL HAZARDOUS
IMDG	AMINES, LIQUID, CORROSIVE, N.O. (Polyoxypropylentriamin Polyoxypropylenediamine), MARINE POLLUTAN
IATA	AMINES, LIQUID, CORROSIVE, N.O. (Polyoxypropylenediamine)
14.3 Transport hazard class(es)	
ADR	
Class Label	8 (C7) Corrosive substances. 8
IMDG, IATA	
Class Label	8 Corrosive substances. 8
14.4 Packing group ADR, IMDG, IATA	II





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14.5 Environmental hazards:	Product contains environmentally hazardou
14.5 Environmental hazards.	substances: Polyoxypropylentriamin
Marine pollutant:	Yes
marine ponatant.	Symbol (fish and tree)
Special marking (ADR):	Symbol (fish and tree)
14.6 Special precautions for user	Warning: Corrosive substances.
Kemler Number:	80
EMS Number:	F-A,S-B
Segregation groups	(SGG18) Alkalis
Stowage Category	Ä
Segregation Code	SG35 Stow "separated from" SGG1-acids
14.7 Maritime transport in bulk accordi	ina to
IMO instruments	Not applicable.
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 n
Transport category	2
Tunnel restriction code	E
IMDG	
Limited quantities (LQ)	1L
Excepted quantities (EQ)	Code: E2
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 n
UN "Model Regulation":	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.
	(POLYOXYPROPYLENTRIAMII
	POLYOXYPROPYLENEDIAMINE), 8,
	ENVIRONMENTALLY HAZARDOUS

## **SECTION 15: Regulatory information**

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · 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.

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· Directive 2012/18/EU

 Qualifying quantity (tonnes) for the application of lower-

tier requirements 200 t

Qualifying quantity (tonnes) for the application of uppertier requirements

15.2 Chemical safety

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

### **SECTION 16: Other information**

· Relevant phrases H302 Harmful if swallowed.

500 t

H304 May be fatal if swallowed and enters airways.

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.

H335 May cause respiratory irritation.

H372 Causes damage to organs through prolonged or repeated

H410 Very toxic to aquatic life with long lasting effects. 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 (UK 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. 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. 1A: Skin sensitisation - Category 1A Skin Sens. 1B: Skin sensitisation - Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) - Category 3 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

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

Asp. Tox. 1: Aspiration hazard - Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic

hazard - 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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