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

1.1 Product identifier

Trade name : XG035-K21 hebro®protect 84-133

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Corrosion inhibitor

1.3 Details of the supplier of the safety data sheet

Company : hebro chemie- ZN der Rockwood Specialties Group GmbH
Rostocker Str. 40
41199 Mönchengladbach
Contact person : Zentrale hebro chemie
Telephone : +49 (0) 2166 6009-0
Telefax : +49 (0) 2166 6009-99

Contact person product safety Abteilung Produktsicherheit
Telephone : +49(0)2166 6009-311
E-mail address : msds.de@hebro-chemie.de

1.4 Emergency telephone number

: Giftinformationszentrum Erfurt:
+49 (0) 361 730 730

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

2.2 Label elements

Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown acute oral toxicity: 99.5 %
The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 99.5 %
The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 99.5 %
The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 82.81 %

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Aqueous preparation of anticorrosives

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Substances with a workplace exposure limit :			
Ethanediol; Ethylene glycol	107-21-1 203-473-3 01-2119456816-28		>= 2.5 - < 10
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation :			
Boric acid	10043-35-3 233-139-2 01-2119486683-25		>= 0.1 - < 1

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : No hazards which require special first aid measures.

In case of skin contact : After contact with skin, wash immediately with plenty of water.

In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If eye irritation persists, consult a specialist.

If swallowed : Rinse mouth.
Prevent vomiting if possible.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

Risks : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
For specialist advice physicians should contact the Poisons Information Service.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : The product itself does not burn.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Foam
Water spray jet
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Combustion may cause:
Carbon dioxide (CO2)
Carbon monoxide

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Handle in accordance with good industrial hygiene and safety practice.

6.2 Environmental precautions

Environmental precautions : Inform the relevant authorities if it enters sewers, aquatic environment or soil.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal.
Contaminated surfaces will be extremely slippery.

6.4 Reference to other sections

Refer to protective measures listed in sections 7 and 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : No special precautions required.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required. Containers which are opened must be carefully resealed and kept upright to prevent

leakage.

Further information on storage conditions : Protect from frost. Keep at temperatures between 5°C and 40°C.

Advice on common storage : No materials to be especially mentioned.

7.3 Specific end use(s)

Specific use(s) : Corrosion inhibitor

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethanediol; Ethylene glycol	107-21-1	TWA (Vapour)	20 ppm 52 mg/m3	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		TWA (particles)	10 mg/m3	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL (Vapour)	40 ppm 104 mg/m3	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Triethanolamine	Workers	Inhalation	Long-term systemic effects	5 mg/m3
	Workers	Inhalation	Long-term local effects	5 mg/m3
	Workers	Skin contact	Long-term systemic effects	6.3 mg/kg bw/day
Ethanediol; Ethylene glycol	Workers	Inhalation	Acute local effects	35 mg/m3
	Workers	Skin contact	Long-term systemic effects	106 mg/kg bw/day
Boric acid	Workers	Inhalation	Long-term systemic effects	8.3 mg/m3
	Workers	Skin contact	Long-term systemic effects	392 mg/kg bw/day
	Workers	Ingestion	Acute systemic effects	0.98 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value

Triethanolamine	Fresh water	0.32 mg/l
	Marine water	0.032 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	1.7 mg/kg
	Marine sediment	0.17 mg/kg
	Soil	0.151 mg/kg
Ethanediol; Ethylene glycol	Fresh water	10 mg/l
	Marine water	1 mg/l
	Sewage treatment plant	199.5 mg/l
	Fresh water sediment	20.9 mg/kg
	Soil	1.53 mg/kg
Boric acid	Fresh water	1.35 mg/l
	Marine water	1.35 mg/l
	Sewage treatment plant	1.75 mg/l
	Fresh water sediment	1.8 mg/kg
	Marine sediment	1.8 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye/face protection : not required

Hand protection
Material : Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.

Skin and body protection : not required

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Filter type : Combined particulates, inorganic and acidic gas/vapour, ammonia/amines and organic vapour type (ABEK-P)

Protective measures : Follow the skin protection plan.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : yellow

Odour : aromatic

: not determined

Upper explosion limit / Upper flammability limit : not determined

Lower explosion limit / Lower flammability limit : not determined

Flash point : > 100 °C

Auto-ignition temperature	:	not determined
pH	:	9.7 (20 °C) Concentration: 10 g/l
Viscosity		
Viscosity, kinematic	:	similar to water
Solubility(ies)		
Water solubility	:	1,000 g/l
Partition coefficient: n-octanol/water	:	Not applicable
Vapour pressure	:	not determined
Density	:	1.13 g/cm³ (20 °C) Method: DIN 51757
Relative vapour density	:	not determined

9.2 Other information

Explosives	:	no explosion risk
Substances and mixtures, which in contact with water, emit flammable gases	:	no explosion risk

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

No data available

SECTION 11: Toxicological information

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

Acute toxicity

Components:

Ethanediol; Ethylene glycol:

Acute inhalation toxicity	:	LC50 (Rat): > 2.5 mg/l Exposure time: 6 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): 9,530 mg/kg

Boric acid:

Acute oral toxicity	:	LD50 (Rat): 3,500 - 4,100 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 2.120 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

Product:

Remarks	:	Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in desiccation of the skin. May cause skin irritation in susceptible persons.

Serious eye damage/eye irritation

Product:

Remarks	:	The liquid splashed in the eyes may cause irritation and reversible damage.

Respiratory or skin sensitisation

Product:

Remarks	:	This information is not available.

Germ cell mutagenicity

Components:

Ethanediol; Ethylene glycol:

Genotoxicity in vitro	:	Test Type: Ames test Result: negative

Reproductive toxicity

Product:

Reproductive toxicity - Assessment	:	May damage fertility. May damage the unborn child.

11.2 Information on other hazards

Further information

Product:

Remarks	:	Health injuries are not known or expected under normal use.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Ethanediol; Ethylene glycol:

Toxicity to fish	:	LC50 (Pimephales promelas (Fathead minnow)): 72,860 mg/l Exposure time: 96 h Test Type: static test NOEC (Pimephales promelas (Fathead minnow)): 15,380 mg/l Exposure time: 7 d
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 NOEC (Ceriodaphnia dubia (water flea)): 8,590 mg/l Exposure time: 7 d
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): 6,500 - 13,000 mg/l Exposure time: 96 h
Toxicity to microorganisms	:	EC20 (activated sludge): > 1,995 mg/l Exposure time: 0.5 h Method: ISO 8192

Boric acid:

Toxicity to fish	:	LC50 (Pimephales promelas (Fathead minnow)): 79.7 mg/l Exposure time: 96 h NOEC (Brachydanio rerio (Zebra danio)): 1.8 mg/l Exposure time: 34 d
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 133 mg/l Exposure time: 48 h NOEC (Daphnia magna (Water flea)): 6 - 13 mg/l Exposure time: 21 d

Toxicity to algae/aquatic plants	:	NOEC (Scenedesmus capricornutum (fresh water algae)): 17.5 mg/l Exposure time: 74.5 h Test Type: Growth inhibition EC50 : 40 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	NOEC (Bacteria): 17.5 mg/l Exposure time: 3 h Test Type: Respiration inhibition

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: No data available

Components:

Ethanediol; Ethylene glycol:

Partition coefficient: n-octanol/water	:	log Pow: -1.36 (23 °C)

12.4 Mobility in soil

Product:

Mobility	:	Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Product:

Additional ecological information	:	Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Do not let product enter drains. Do not dispose of with domestic refuse. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
Contaminated packaging	:	Dispose of in accordance with local regulations.
Waste Code	:	Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

SECTION 14: Transport information

14.1 UN number or ID number

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA_P	:	Not regulated as a dangerous good

14.2 UN proper shipping name

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA_P	:	Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA_P	:	Not regulated as a dangerous good

14.4 Packing group

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA (Cargo)	:	Not regulated as a dangerous good
IATA_P (Passenger)	:	Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

UK REACH List of substances subject to authorisation (Annex XIV)	:	Not applicable
UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	:	Boric acid
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain)	:	Not applicable

Other regulations:

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance.

SECTION 16: Other information

Full text of other abbreviations

GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	:	Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	:	Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quanti-

tative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information	:	The information provided is based on our current knowledge and experience and apply to the product as delivered. Regarding the product properties, these are not guaranteed. The delivery of this safety datasheet does not free the recipient of the product from his own responsibility to follow the relevant rules and regulations concerning this product. This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

GB / EN