

Safety Data Sheet

In accordance with Regulation (EU) Nr. 453/2010

Rittal GmbH & Co.KG
Auf dem Stützelberg
D-35745 Herborn
Tel. +49 2772 505 0
www.rittal.com



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

1.1 Product identifier

1.2 Trade name: **Cooling medium for recooling (Chiller) systems (ready mix 1:4 standard)**

1.3 Article number: 3301960 / 3301965 / 3301967

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

1.5 Application of the substance / the preparation

Heat transfer fluid
antifreeze

1.6 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Rittal GmbH & Co. KG
Auf dem Stützelberg
D – 35745 Herborn

1.7 Informing department:

Department Marketing, Phone: 02772/505-9052
E-Mail: info@rittal.de

1.8 Emergency telephone number:

Poison control center at the University Hospital, Bonn
Phone +49(0)228-19240

2 Hazards identification

2.1 Classification of the substance or mixture

Classification according CLP regulation (Regulation (EC) No. 1272/2008, as amended)

Hazard class	Hazard category	H-phrases
Acute toxicity	Category 4	Harmful if swallowed.

Classification according EC Directive (67/548/EEC or 1999/45/EC, as amended)

Category of danger/Category	Hazard symbol	R - phrases
	Harmful	Harmful if swallowed.

2.2 Label elements

Labelling in accordance with EC-Directives (67/548/EEC or 1999/45/EC, as amended)

The product does not require a hazard warning label in accordance with EC Directives

2.3 Other hazards

No additional hazards are known except those derived from the labelling.

3 Composition/information on ingredients

3.1 Mixtures

Chemical characterization

Monoethylene glycol (1,2-ethane diol) with corrosion inhibitors

Hazardous ingredients

Ethenediol

Concentration : 19 – 22 %
CAS number : 107-21-1
EC number: 203-473-3
Index Number 603-027-00-1
REACH –
Registration number

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according to article 20(3): 01-2119456816-28, 01-2119456816-28-0000, 01-2119456816-28-0003, 01-2119456816-28-XXXX

Classification hazard substance EC

Xn	Harmful	R 22
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GHS classification EC

Specific target organ toxicity - Repeated exposure	Category 2	H373
Acute toxicity	Category 4	H302

The text of the R-phrases is shown in section 16.

The text of the H-phrases is shown in section 16.

4 First aid measures

4.1 Description of first aid measures

General information

Remove soiled or soaked clothing immediately

After inhalation

In the event of symptoms seek medical advice.

After contact with skin

In case of contact with skin wash off immediately with plenty of water

After contact with eyes

In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice

After ingestion

Summon a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed Symptoms

No symptoms known currently.

Hazards

No hazards known at this time.

4.3 Indication of any immediate medical attention and special treatment needed Treatment

Treat symptomatically.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Product itself is non-combustible; Fire extinguishing method of surrounding areas must be discussed.

5.2 Special hazards arising from the substance or mixture

In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO)
Nitrous gases (NO_x)

5.3 Advice for firefighters

Special protective equipment for firefighting

Use self-contained breathing apparatus

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.

Wear suitable personal protective equipment.

6.2 Environmental precautions

Do not allow to enter drains or waterways



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6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (eg sand, kieselgur, acid binder, universal binder, sawdust).
Dispose of as prescribed

6.4 Reference to other sections

Additional information

Information regarding Safe handling, see chapter 7.

7 Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Open and handle container with care.

Provide good ventilation of working area (local exhaust ventilation if necessary).

Hygiene measures

Keep away from foodstuffs and beverages.

Advice on protection against fire and explosion

Observe the general rules of industrial fire protection

7.2 Conditions for safe storage, including any incompatibilities

Advice on storage compatibility

Do not store with alkalies

Do not store with strong oxidizing agents

Storage Class:

12: Non flammable liquid

7.3 Specific end use(s)

No further recommendations.

8 Exposure controls/personal protection

8.1 Control parameters

Exposure limit values

Ethylene glycol

EC number: 203-473-3

CAS number : 107-21-1



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Regulatory basis / Regulatory list	Revision	Type of value	Values	Remarks
Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values EU. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC.	2000-06-16	Limit Value - eight hours	52 mg/m ³ 20 ppm	
Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values EU. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC.	2000-06-16	Short term exposure limit	104 mg/m ³ 40 ppm	

DNEL/DMEL values

Ethanediol

EC number: 203-473-3

CAS number : 107-21-1

Route of exposure	Personnel	Exposure time/Effect	Value	Remarks
Dermal	Worker	Long term/systemic effects	106 mg/kg bw/day	DNEL
Inhalation	Worker	Long term/local effects	35 mg/m ³	DNEL
Dermal	General population	Long term/local effects	53 mg/kg bw/day	DNEL
Inhalation	General population	Long term/local effects	7 mg/m ³	

PNEC values

Ethanediol

EC number: 203-473-3

CAS number : 107-21-1



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Environmental compartment	Personnel/Exposure time/Effect Value	Value
Water (fresh water)		10 mg/l
Water (sea water)		1 mg/l
Water (intermittent release)		10 mg/l
Sediment (fresh water)		20,9 mg/kg sediment dw
Soil		1,53 mg/kg soil dw
STP		199,5 mg/l

8.2 Exposure controls

General protective measures

Do not inhale vapours

Respiratory protection : Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure Full mask to standard DIN EN 136 Filter A (organic gases and vapours) to standard DIN EN 141 The use of filter apparatus presupposes that the environment atmosphere contains at least 17% oxygen by volume, and does not exceed the maximum gas concentration, usually 0.5% by volume. Relevant guidelines to be considered include EN 136/141/143/371/372 as well as other national regulations.

Hand protection : For long-term exposure: Butyl rubber gloves
 Minimum breakthrough time / gloves : 480 min
 Minimum thickness / gloves 0,7 mm
 For short-term exposure (splash protection):
 Nitrile rubber gloves.
 Minimum breakthrough time / gloves : 30 min
 Minimum thickness / gloves 0,4 mm
 These types of protective gloves are offered by various manufacturers. Please note the manufacturers' detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.

Eye protection : Safety glasses

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state: Liquid
Form : Liquid
Particle size : Not applicable
Colour : Light yellow
Odour : slightly perceptible
Odour threshold : not tested.
pH value : approx. 8 (20 °C, 100 g/l)
 Method : DIN 19268
Melting point : -11 °C
 Method : DIN 51583
Boiling temperature : 103 °C (1.013 mbar)

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Flash point :	Method : ASTM D 1120 Method : ASTM D6450 (closed cup) Not flammable (water-based)
Evaporation rate :	Not applicable
Lower explosion limit :	Not tested
Upper explosive limit :	Not tested
Combustion number :	Not applicable
Minimum ignition energy :	not tested.
Vapour pressure :	< 0,01 kPa (20 °C) Method : Calculated by Syracuse.
Vapour density relative to air:	Not applicable
Solubility in water :	(20 °C) miscible in all proportions
Soluble in :	fat not tested.
Octanol/water partition coefficient (log Pow) :	Not applicable
Ignition temperature :	Method : DIN 51794 Not applicable for Liquids with Flash Point > 70 °C
Self-ignition temperature :	not applicable
Thermal decomposition :	> 250 °C Method : DSC Measurement under nitrogen No decomposition up to 250 °C.
Viscosity (dynamic) :	1,72 mPa.s (20 °C)
Viscosity (kinematic) :	1,68 mm ² /s (20 °C) Method : DIN 51562
Explosive properties :	Explosive according to EU supply regulations : no data
Oxidizing properties :	Not applicable
9.2 Other information	
Density :	1,0259 g/cm ³ (20 °C) Method: DIN 51757
Bulk density :	Not applicable
Surface tension :	Not applicable

10 Stability and reactivity

10.1 Reactivity

See section 10.3. "Possibility of hazardous reactions"

10.2 Chemical stability

Under normal conditions the product is stable.

10.3 Possibility of hazardous reactions

Reactions with alkalis.

Reactions with oxidising agents.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Not known

10.6 Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known

11 Toxicological information

11.1 Information on toxicological effects

Information related to the product itself:

Acute oral toxicity :

not tested.

Acute dermal toxicity :

LD50 > 3.500 mg/kg (mouse)

Data relate to main component.

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Acute inhalation toxicity :	LC50 > 2,5 mg/l (6 h, rat) Data relate to the main component
Irritant effect on skin :	non-irritant (rabbit) Data relate to main component
Irritant effect on eyes :	non-irritant (rabbit eye) Data relate to main component
Sensitization :	non-sensitizing (Guinea pig) Method : Magnusson/Kligman Data relate to main component
Repeated dose toxicity:	Sub-acute oral toxicity Route of application: gavage NOAEL: 200 mg/kg (Rats, male/female) Method : OECD Guide-line 407 Repeated Dose Toxicity (subchronic study) Route of application: oral feed NOAEL: 150 mg/kg (Rats, male) Method : OECD Guide-line 408 Sub-acute dermal toxicity Route of application: dermal NOAEL: 2,22 mg/kg (dog, male) Method : OECD Guide-line 410 Data relate to the main component
Assessment of mutagenicity :	It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests. Data relate to main component
Assessment of carcinogenicity :	No indications of carcinogenic effects are available from longterm trials. Data relate to main component
Assessment of toxicity to reproduction :	No reproductive toxicity to be expected. Data relate to main component
Assessment of teratogenicity:	No indications of toxic effects were observed in reproduction studies in animals. Data relate to main component
Specific target organ toxicity (STOT) - single exposure :	not tested.
Specific target organ toxicity (STOT) - repeated exposure :	not tested.
Information related to the component:	Ethanediol
Acute oral toxicity :	LD50 4.700 mg/kg (rat)
Remarks:	Vapours and mists cause irritation/burns to eyes and the respiratory tract There is a possibility of kidney damage Poisoning affects the central nervous system The product was classified on the basis of the calculation procedure of the Dangerous Preparations Directive (1999/45/EC).

12 Ecological information

12.1 Toxicity

Information related to the product itself:

Fish toxicity :	LC0 1.000 mg/l (golden orfe) LL50 > 100 mg/l (96 h, Zebra fish (Danio rerio)) Method : OECD 203
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Daphnia toxicity :

By analogy with a similar product.
EC50 > 100 mg/l (48 h, Daphnia magna)
Method : OECD 202

Algae toxicity :

Information relates to the main component.
EC50 6.500 - 13.000 mg/l (96 h, Selenastrum capricornutum) Information relates to the main component.

Bacteria toxicity :

EC20 > 1.995 mg/l (30 min, activated sludge)
Method : ISO 8192
Information relates to the main component.

12.2 Persistence and degradability

Information related to the product itself:

Biodegradability :

90 - 100 % (10 d) Method : OECD 301 A
The product is readily biodegradable according to OECD criteria. Information relates to the main component.

12.3 Bioaccumulative potential

Information related to the product itself:

Bioaccumulation:

not tested.

12.4 Mobility in soil

Information related to the product itself:

Transport and distribution between environmental compartments :

not tested.

12.5 Results of PBT and vPvB assessment

Information related to the product itself:

After consideration of all available toxicity and ecotoxicity data it is concluded that the substance does not fulfil the PBT or vPvB criteria.

Data relate to the main component

12.6 Other adverse effects

Information related to the product itself:

Additional ecotoxicological remarks

If handled correctly it causes no disturbance in treatment plants.

The product was classified according to the calculation method of the EU Dangerous Preparations Directive.

13 Disposal considerations

13.1 Waste treatment methods

Product

Dispose of in accordance with local authority regulations.

Uncleaned packaging

Uncontaminated packaging may be reused.

Packaging that cannot be cleaned should be disposed of as product waste.

14 Transport information

Section 14.1. to 14.5.

ADR not restricted

ADN not restricted

RID not restricted

IATA not restricted

IMDG not restricted

14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

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14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code (International Bulk Chemicals Code)

No transport as bulk according IBC - Code.

15 Regulatory information

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

Other regulations

Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

15.2 Chemical safety assessment

Chemical Safety Assessments (CSAs) are available for one or more of the component substances contained in this product.

Exposure scenarios - links

Please select the specified addresses from the internet in order to see the exposure scenarios.

URL Short title	Kurztitel
https://reachdialogsystem.clariant.com/ESDocs/EXS000005.pdf	Monoethylene glycol - all exposure scenarios

16 Other information

Observe national and local legal requirements

Text of the R-phrases assigned to the ingredients/components mentioned in section 3 :

22 Harmful if swallowed.

List of the text of the hazard statements mentioned section 3 (H-phrases) :

H302 Harmful if swallowed.

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

Decimal notation: "thousands" places are identified with a dot (for example, "2.000 mg/kg" means "two thousand mg/kg"). Decimal places are identified with a comma (for example, "1,35 g/cm³" means "one point three five g/cm³").

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