

	<b>SAFETY DATA SHEET</b> <b>GLITHERM ET LIQUID ANTIFREEZE</b>	Version: 2
		Date of issue: 13.07.2022
		Number of updates: 0
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## SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product Identifier

**Trade name:** GLITHERM ET LIQUID ANTIFREEZE

### 1.2. Relevant identified uses of the substance/mixture and uses advised against

**Recommended use:** Filling refrigeration, air conditioning, heating, solar and heat pump installations

### 1.3. Details of the supplier of the safety data sheet

**Company:** GLI-THERM Sp. z o.o.  
 ul. Rozwojowa 11, 44-338 Jastrzębie-Zdrój  
 Tel.: +48 32 435 30 76  
[info@glitherm.eu](mailto:info@glitherm.eu)  
[www.glitherm.eu](http://www.glitherm.eu)

**1.4. Emergency telephone number:** +48 32 435 30 76

## SECTION 2. HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

Product classification:

**Acute Tox. 4, H302, STOT RE 2, H373**

Please consult chapter 16 of this SDS for full text of mentioned H phrases.

Physical and chemical hazards:

- none.

Human health hazards:

- harmful if swallowed  
 - may cause damage to organs through prolonged or repeated exposure.

Environmental hazards:

- none.

### 2.2. Label elements

**Hazard pictograms:**



**Signal Word:** WARNING

#### H Phrases:

H302 Harmful if swallowed  
 H373 May cause damage to organs through prolonged or repeated exposure

#### P Phrases:

P102 Keep out of reach of children  
 P260 Do not breathe vapours/ spray  
 P264 Wash hands thoroughly after handling  
 P270 Do not eat, drink or smoke when using this product  
 P301+P312 IF SWALLOWED: Call a POISON CENTRE/ doctor if you feel unwell  
 P314 Get medical advice/attention if you feel unwell  
 P501 Dispose of contents/container to hazardous or special waste collection point

Contents: Ethane-1,2-diol

### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB.



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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substances

N.A.

#### 3.2. Mixtures

22.0% - 50.0% Ethane-1,2-diol

Index No: 603-027-00-1

CAS No: 107-21-1

EC No: 203-473-3

REACH No: 01-2119456816-28-0004

- Acute Tox. 4, H302, STOT RE 2, H373

0.1% - 0.2% Potassium hydroxide

Index No: 019-002-00-8

CAS No: 1310-58-3

EC No: 215-181-3

REACH No: 01-2119487136-33-XXXX

- Met. Corr. 1, H290, Acute Tox. 4, H302, Skin Corr. 1A, H314

Specific Conc. Limits: Eye Irrit. 2; H319:  $0,5\% \leq C < 2\%$ ; Skin Corr. 1A; H314:  $C \geq 5\%$ ; Skin Corr. 1B; H314:  $2\% \leq C < 5\%$ ; Skin Irrit. 2; H315:  $0,5\% \leq C < 2\%$

0.1% - 0.2% Dipotassium tetraborate

Index No: -

CAS No: 12045-78-2

EC No: 215-575-5

- Repr. 2, H361d

Please consult chapter 16 of this SDS for full text of mentioned H phrases.

### SECTION 4. FIRST AID MEASURES

#### 4.1. Description of first aid measures

##### In case of Inhalation:

- remove to open air
- if breathing is irregular or stopped, administer artificial respiration
- consult a doctor immediately and show him packing or label.

##### In case of skin contact:

- immediately take off all contaminated clothing
- immediately wash with plenty of water
- if irritation persists, obtain immediate medical attention.

##### In case of eyes contact:

- remove contact lenses, if present
- irrigate copiously with clean, fresh water for at least 15 minutes
- if irritation persists, obtain immediate medical attention.

##### In case of Ingestion:

- rinse mouth thoroughly with water; give plenty of water to drink
- induce vomiting only if indicated by the doctor
- give nothing by mouth to an unconscious person
- get medical attention if any discomfort continues
- show this safety data sheet to the medical personnel.

#### 4.2. Most important symptoms and effects, both acute and delayed

See section 11.

#### 4.3. Indication of any immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

### SECTION 5. FIRE-FIGHTING MEASURES

#### 5.1. Extinguishing media

- suitable extinguishing media: chemical powders (type ABC or BC), CO<sub>2</sub>, foam, nebulized water
- extinguishing media which must not be used for safety reasons: water jet

#### 5.2. Special hazards arising from the substance or mixture

- do not inhale explosion and combustion gases
- burning produces heavy smoke (CO, CO<sub>2</sub>)
- cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk
- cool containers exposed to flames with water until well after the fire is out.

#### 5.3. Advice for firefighters

- use suitable breathing apparatus
- collect contaminated fire extinguishing water separately. This must not be discharged into drains



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- move undamaged containers from immediate hazard area if it can be done safely.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal precautions, protective equipment and emergency procedures

- wear personal protection equipment
- remove all sources of ignition
- evacuate area; inform the responsible authorities
- wear breathing apparatus if exposed to vapours/dusts/aerosols
- provide adequate ventilation
- use appropriate respiratory protection.

#### 6.2. Environmental precautions

- do not allow to enter into soil/subsoil; do not allow to enter into surface water or drains
- retain contaminated washing water and dispose it
- in case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities
- suitable material for taking up: absorbing material, sand.

#### 6.3. Methods and material for containment and cleaning up

- immediately remove the product using appropriate personal protective equipment
- eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage
- in case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities
- suitable material for taking up: absorbing material, sand
- flush contaminated area with plenty of water, retain contaminated washing water and dispose it.

#### 6.4. Reference to other sections

See also section 8 and 13.

### SECTION 7. HANDLING AND STORAGE

#### 7.1. Precautions for safe handling

- wear personal protection equipment
- keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
- use localized ventilation system
- avoid the accumulation of electrostatic charges
- do not eat or drink while working
- do not smoke, do not use matches or lighters
- immediately take off all contaminated clothing.

#### 7.2. Conditions for safe storage, including any incompatibilities

- always keep the containers tightly closed, in a cool, well ventilated place (under 40 °C)
- keep only in the original container
- keep containers upright
- keep away from food, drink and feed
- keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
- cool and adequately ventilated
- do not store with incompatible substances (see section 10).

#### 7.3. Specific end use(s)

See section 1.2.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control parameters

Exposure limit values:

##### Ethane-1,2-diol:

TWA: 52 mg/m<sup>3</sup>; 20 ppm

STEL: 104 mg/m<sup>3</sup>; 40 ppm

##### DNEL - Ethane-1,2-diol:

###### Application Area

Workers

Workers

Consumers

Consumers

###### Exposure routes

Skin contact

Inhalation

Skin contact

Inhalation

###### Health effect

Long-term systemic effects

Long-term local effects

Long-term systemic effects

Long-term local effects

###### Value

106 mg/kg BW/d

35 mg/m<sup>3</sup>

53 mg/kg BW/d

7 mg/m<sup>3</sup>

##### PNEC - Ethane-1,2-diol:

###### Compartment

Fresh water

###### Value

10 mg/l



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Marine water	1 mg/l
Aquatic intermittent release	10 mg/l
Fresh water sediment	20.9 mg/kg
Soil	1.53 mg/kg
Sewage treatment plant	199.5 mg/l

### 8.2. Exposure controls

#### Eye protection:

- use close fitting safety goggles, masks suitable for the product.

#### Protection for skin and hands:

- wear protective gloves, protective clothing. The most suitable glove should be chosen in consultation with the glove supplier/manufacture, who can provide information about the breakthrough time of the glove material. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

#### Respiratory protection:

- good ventilation is essential when handling this material – do not breathe vapour
- use adequate protective respiratory equipment
- use a properly fitted, air-purifying or air-fed-respirator complying with an approved standard (with type A absorber) if a risk assessment indicates this is necessary.

#### Thermal Hazards:

None.

#### Environmental exposure controls:

- do not allow to enter into soil/subsoil; do not allow to enter into surface water or drains.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

(a) Physical state:	liquid
(b) Colour:	N.A.
(c) Odour:	N.A.
(d) Melting point/freezing point:	N.A.
e) Boiling point or initial boiling point and boiling range:	N.A.
(f) Flammability:	Not applicable
(g) Lower and upper explosion limit:	3.2% vol./ 15.3% vol. (Ethane-1,2-diol)
(h) Flash point:	> 60 °C
(i) Auto-ignition temperature:	398 °C (Ethane-1,2-diol)
(j) Decomposition temperature:	N.A.
(k) pH:	N.A.
(l) Kinematic viscosity:	N.A.
(m) Solubility:	N.A.
(n) Partition coefficient n-octanol/water (log value):	-1.36 (Ethane-1,2-diol)
(o) Vapour pressure:	N.A.
(p) Density and/or relative density:	N.A.
q) Relative vapour density:	2.14 (Air = 1) (Ethane-1,2-diol)
(r) Particle characteristics:	Not applicable

### 9.2. Other information

Dynamic viscosity: 16.1 mPas (20 °C) (Ethane-1,2-diol).

## SECTION 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

Stable under normal conditions.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

N.A.

### 10.4. Conditions to avoid

- keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
- avoid accumulating electrostatic charge
- avoid contact with moisture.

### 10.5. Incompatible materials

- strong oxidizing
- strong bases and acids.



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### 10.6. Hazardous decomposition products

See section 5.

## SECTION 11. TOXICOLOGICAL INFORMATION

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

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

#### a) Acute toxicity:

Harmful if swallowed.

##### Mixture:

Oral: 300 < ATE<sub>mix</sub> ≤ 2000 (mg/kg bodyweight)

##### Ethane-1,2-diol:

Oral: Rat LD<sub>50</sub> 7112 mg/kg

Skin: Rat LD<sub>50</sub> > 3500 mg/kg

Inhalation: Rat LC<sub>50</sub> > 2.5 mg/l

##### Potassium hydroxide:

Oral: Rat LD<sub>50</sub> 333-388 mg/kg

##### Dipotassium tetraborate:

Oral: Rat LD<sub>50</sub> 3690 mg/kg

Skin: Rabbit LD<sub>50</sub> 2000-5000 mg/kg

Inhalation: Rat LC<sub>50</sub> > 2 g/m<sup>3</sup>/4h

#### b) Skin corrosion/irritation:

Not applicable.

#### c) Serious eye damage/irritation:

Not applicable.

#### d) Respiratory or skin sensitization:

Not applicable.

#### e) Germ cell mutagenicity:

Not applicable.

#### f) Carcinogenicity:

Not applicable.

#### g) Reproductive toxicity:

Not applicable.

#### h) STOT-single exposure:

Not applicable.

#### i) STOT-repeated exposure:

May cause damage to organs through prolonged or repeated exposure.

#### j) Aspiration hazard:

Not applicable.

### 11.2. Information on other hazards:

None.

## SECTION 12. ECOLOGICAL INFORMATION

Adopt good working practices, so that the product is not released into the environment. Prevent product entering water courses, sewers and prevent penetration of the product into the earth.

### 12.1. Toxicity:

N.A.

##### Ethane-1,2-diol:

EC<sub>50</sub>: 13.900-57.600 mg/l – toxicity to *Daphnia magna*, 48h

EC<sub>50</sub>: 6.500-13.000 mg/l – toxicity to *Pseudokirchneriella subcapitata*, 96h

LC<sub>50</sub>: 72.860 mg/l - toxicity to fish *Pimephales promelas*, 96h

NOEC: 15.380 mg/l - toxicity to fish *Pimephales promelas*, 7d

##### Dipotassium tetraborate:

LC<sub>50</sub>: 80-627 mg/l - toxicity to fish

EC<sub>50</sub>: 133 mg/l - toxicity to *Daphnia magna*

### 12.2. Persistence and degradability:

N.A.

Ethane-1,2-diol – this substance is easily biodegradable.

### 12.3. Bioaccumulative potential:

N.A.

Potassium hydroxide – partition coefficient n-octanol/water (K<sub>oc</sub>): 0.65



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### 12.4. Mobility in soil:

N.A.

### 12.5. Results of PBT and vPvB assessment:

vPvB Substances: None - PBT Substances: None

### 12.6. Endocrine disrupting properties:

Information not available.

### 12.7. Other adverse effects:

Information not available.

## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods:

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

## SECTION 14. TRANSPORT INFORMATION

- |  |      |
|--|------|
| 14.1. UN number or ID number:                                  | N.A. |
| 14.2. UN proper shipping name:                                 | N.A. |
| 14.3. Transport hazard class(es):                              | N.A. |
| 14.4. Packing group:   | N.A. |
| 14.5. Environmental hazards:                                   | N.A. |
| 14.6. Special precautions for user:                            | N.A. |
| 14.7. Maritime transport in bulk according to IMO instruments: | N.A. |

## SECTION 15. REGULATORY INFORMATION

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

- REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing
- REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC
- COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

### 15.2. Chemical safety assessment

No.

## SECTION 16. OTHER INFORMATION

This document was prepared by a competent person who has received appropriate training. This safety data sheet has been prepared on the basis of data provided by the manufacturer.

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This document must not be regarded as a guarantee on any specific product property

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstracts Service (division of the American Chemical Society).  
CLP: Classification, Labeling, Packaging.  
DNEL: Derived No Effect Level.  
EINECS: European Inventory of Existing Commercial Chemical Substances.  
IMDG: International Maritime Code for Dangerous Goods.  
LC50: Lethal concentration, for 50 percent of test population.  
LD50: Lethal dose, for 50 percent of test population.  
STOT: Specific Target Organ Toxicity.  
TLV TWA: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard)  
Acute Tox. 4 Acute toxicity 4  
Eye Irrit. 2 Eye irritation 2  
Met. Corr. 1 Substance or mixture corrosive to metals 1  
Repr. 2 Reproductive toxicity 2  
Skin Corr. 1A Skin corrosion 1A



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Skin Corr. 1B Skin corrosion 1B  
Skin Irrit. 2 Skin irritation 2  
STOT RE 2 Specific target organ toxicity — repeated exposure 2

Full text of phrases referred to in Section 3:

H290 May be corrosive to metals  
H302 Harmful if swallowed  
H314 Causes severe skin burns and eye damage  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H361d Suspected of damaging the unborn child  
H373 May cause damage to organs through prolonged or repeated exposure

Updating the card is caused by a change of regulatory information.

This document was prepared by: CHEMIKOS; [www.chemikos.pl](http://www.chemikos.pl); e-mail: [biuro@chemikos.pl](mailto:biuro@chemikos.pl)