

Fire Extinguisher Antifreeze



Ethane-1,2-diol



Fire Safety



Call Systems



Access & Security



DDA Compliance

Ethane-1,2-diol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of issue: 17/11/2016

Version: 1.0

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

1.1. Product identifier

Product form : Substance
Substance name : Ethane-1,2-diol
Chemical name : ethanediol, ethylene glycol
EC index no : 603-027-00-1
EC no : 203-473-3
CAS No : 107-21-1
Product code : FM332
Type of product : Pure substance
Formula : C₂H₆O₂
Synonyms : 1,2-dihydroxyethane / 1,2-ethanediol / 1,2-ethylene glycol / 2-hydroxyethanol / antifreeze / COREXIT 2920 / dihydroxyethane / DOWTHERM SR1 / ECA6969 / EG (=ethylene glycol) / ethane-1,2-diol / ethylene alcohol / ethylene dihydrate / FRIDEX / glycol alcohol / glycol / glycol alcohol / LUTROL-9 / MACROGOL 400BPC / MEG (=monoethylene glycol) / monoethylene glycol / NA1142 / NORKOOL / RAMP / TESCOLOL / thermofluide UCAR17 / UCAR17 / ZEREX
BIG no : 14248

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Solvent
Fuel: additive
Oil: additive
Chemical raw material
Anti-freezing agent

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ANGUS FIRE Ltd
Station Road
Bentham LA2 7NA - United Kingdom
T +44 1524 264000 - F +441524 264180
general.enquiries@angusuk.co.uk - www.angusfire.co.uk

1.4. Emergency telephone number

Emergency number : T +44(0) 1524 264000 (Standard office hours: Monday to Friday 8:30am – 4:30pm GMT)
Contact person: EH&S Manager

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral) H302

STOT RE 2 H373

Full text of H-statements: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xn; R22

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

Ethane-1,2-diol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

GHS08

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H302 - Harmful if swallowed
H373 - May cause damage to organs (Kidney) through prolonged or repeated exposure (swallowed)

Precautionary statements (CLP) :

P264 – Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P301+P312 - IF SWALLOWED: Call a doctor if you feel unwell
P314 - Get medical advice/attention if you feel unwell
P330 - Rinse mouth
P501 - Dispose of contents/container according to local and/or national regulations

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name : Ethane-1,2-diol
CAS No : 107-21-1
EC no : 203-473-3
EC index no : 603-027-00-1

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Ethane-1,2-diol (Main constituent)	(CAS No) 107-21-1 (EC no) 203-473-3 (EC index no) 603-027-00-1	100	Xn; R22

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Ethane-1,2-diol (Main constituent)	(CAS No) 107-21-1 (EC no) 203-473-3 (EC index no) 603-027-00-1	100	Acute Tox. 4 (Oral), H302 STOT RE 2, H373

Full text of R- and H-statements: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Rinse with water. Soap may be used. Remove clothing before washing. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Give activated charcoal. Consult a doctor/medical service if you feel unwell. Call Poison Information Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital. Doctor: administration of chemical antidote. Doctor: gastric lavage.

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

Symptoms/injuries : Causes damage to organs (Kidney) (swallowed).

Ethane-1,2-diol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Symptoms/injuries after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Dry/sore throat. Irritation of the nasal mucous membranes.
Symptoms/injuries after eye contact	: ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue. Redness of the eye tissue. Lacrimation.
Symptoms/injuries after ingestion	: AFTER ABSORPTION OF HIGH QUANTITIES: Feeling of weakness. Central nervous system depression. Nausea. Vomiting. Gastrointestinal complaints. Difficulty in swallowing. Headache. Dizziness. Narcosis. Drunkenness. Disturbed tactile sensibility. Disturbed motor response. Visual disturbances. Disturbances of consciousness. Brain affection. Accelerated heart action. Low arterial pressure. Change in the haemogramme/blood composition. Rapid respiration. Cramps/uncontrolled muscular contractions. FOLLOWING SYMPTOMS MAY APPEAR LATER: Blue/grey discolouration of the skin. Decreased renal function. Change in urine composition. Change in urine output.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Polyvalent foam. Alcohol-resistant foam. Polymer foam. BC powder. Carbon dioxide.
Unsuitable extinguishing media	: Container may slop over if solid jet (water/foam) is applied.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD. Combustible. INDIRECT FIRE HAZARD. Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard	: INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. See "Material-Handling" to select protective clothing.
Emergency procedures	: Mark the danger area. No naked flames. Wash contaminated clothes. In case of reactivity hazard: consider evacuation.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment	: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply.
Methods for cleaning up	: Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite or powdered limestone. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Use earthed equipment. Keep away from naked flames/heat. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
Hygiene measures	: Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Ethane-1,2-diol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources	: KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents. (strong) acids. (strong) bases. water/moisture.
Storage area	: Store in a dry area. Ventilation at floor level. Fireproof storeroom. Keep locked up. Under a shelter/in the open. Underground. May be stored under nitrogen. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: stainless steel. carbon steel. steel with plastic inner lining. glass.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethane-1,2-diol (107-21-1)		
EU	IOELV TWA (mg/m ³)	52 mg/m ³
EU	IOELV TWA (ppm)	20 ppm
EU	IOELV STEL (mg/m ³)	104 mg/m ³
EU	IOELV STEL (ppm)	40 ppm

8.2. Exposure controls

Materials for protective clothing	: GIVE EXCELLENT RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. polyethylene. PVC. tetrafluoroethylene. viton. polyethylene/ethylenevinylalcohol. GIVE GOOD RESISTANCE: chlorinated polyethylene. polyurethane. PVA.
Hand protection	: Gloves.
Eye protection	: Safety glasses.
Skin and body protection	: Protective clothing.
Respiratory protection	: Wear gas mask with filter type A if conc. in air > exposure limit.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 62.07 g/mol
Colour	: Colourless.
Odour	: Almost odourless.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: -13 °C
Freezing point	: No data available
Boiling point	: 197 °C
Flash point	: 111 °C
Critical temperature	: 372 °C
Auto-ignition temperature	: 398 °C
Decomposition temperature	: > 500 °C
Flammability (solid, gas)	: No data available
Vapour pressure	: 0.07 hPa (20 °C)
Vapour pressure at 50 °C	: 1.1 hPa (50 °C)
Relative vapour density at 20 °C	: 2.1
Relative density	: 1.1
Density	: 1130 kg/m ³
Solubility	: Soluble in water. Soluble in ethanol. Soluble in acetone. Soluble in acetic acid. Soluble in glycerol. Soluble in pyridine. Water: Complete Ethanol: Complete Acetone: Complete
Log Pow	: -1.34 (Experimental value)
Viscosity, kinematic	: 18.86 mm ² /s (20 °C)

Ethane-1,2-diol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Viscosity, dynamic	: 0.021 Pa.s (20 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 3 - 15 vol %

9.2. Other information

Specific conductivity	: 116 µS/m
Saturation concentration	: 0.31 g/m ³
VOC content	: 0 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Slightly volatile. Substance has neutral reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts on exposure to water and heat with (some) metals. Reacts on exposure to temperature rise with (some) bases. Upon combustion: CO and CO₂ are formed. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Violent to explosive reaction with (some) acids.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

Ethane-1,2-diol (107-21-1)

LD50 oral rat	> 5000 mg/kg (Rat; Study on Literature)
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: May cause damage to organs (Kidney) through prolonged or repeated exposure (swallowed).
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Classification concerning the environment: not applicable.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). TA-Luft Klasse 5.2.5/l.
Ecology - water	: Mild water pollutant (surface water). Ground water pollutant. Not harmful to fishes (LC50(96h) >1000 mg/l). Not harmful to invertebrates (Daphnia) (EC50 > 1000 mg/l). Not harmful to algae (EC50 >1000 mg/l). Not harmful to bacteria (EC50 >1000 mg/l). Inhibition of activated sludge.

Ethane-1,2-diol (107-21-1)

LC50 fish 1	53000 mg/l (96 h; Pimephales promelas; Static system)
EC50 Daphnia 1	> 10000 mg/l (24 h; Daphnia magna)
LC50 fish 2	40761 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Static system)
Threshold limit algae 1	> 10000 mg/l (168 h; Scenedesmus quadricauda)

Ethane-1,2-diol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Ethane-1,2-diol (107-21-1)	
Threshold limit algae 2	2000 mg/l (192 h; Microcystis aeruginosa)

12.2. Persistence and degradability

Ethane-1,2-diol (107-21-1)	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.47 g O ₂ /g substance
Chemical oxygen demand (COD)	1.24 g O ₂ /g substance
ThOD	1.29 g O ₂ /g substance
BOD (% of ThOD)	0.36

12.3. Bioaccumulative potential

Ethane-1,2-diol (107-21-1)	
BCF fish 1	10 (72 h; Leuciscus idus)
BCF other aquatic organisms 1	0.21 - 0.6 (Procambarus sp.; Chronic)
BCF other aquatic organisms 2	190 (24 h; Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low bioaccumulation potential.

12.4. Mobility in soil

Ethane-1,2-diol (107-21-1)	
Surface tension	0.048 N/m (20 °C)

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into surface water. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.
- Additional information : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC.
- European List of Waste (LoW) code : 07 01 04* - other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

- Proper Shipping Name (ADR) : Not applicable
- Proper Shipping Name (IMDG) : Not applicable
- Proper Shipping Name (IATA) : Not applicable
- Proper Shipping Name (ADN) : Not applicable
- Proper Shipping Name (RID) : Not applicable

14.3. Transport hazard class(es)

ADR

- Transport hazard class(es) (ADR) : Not applicable

IMDG

- Transport hazard class(es) (IMDG) : Not applicable

IATA

Ethane-1,2-diol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Transport hazard class(es) (IATA) : Not applicable

ADN

Transport hazard class(es) (ADN) : Not applicable

RID

Transport hazard class(es) (RID) : Not applicable

14.4. Packing group

Packing group (ADR) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

Packing group (ADN) : Not applicable

Packing group (RID) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

14.6.1. Overland transport

Transport regulations (ADR) : Not subject

14.6.2. Transport by sea

Transport regulations (IMDG) : Not subject

14.6.3. Air transport

Transport regulations (IATA) : Not subject

14.6.4. Inland waterway transport

Carriage prohibited (ADN) : No

Not subject to ADN : No

14.6.5. Rail transport

Transport regulations (RID) : Not subject

Carriage prohibited (RID) : No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

VOC content : 0 %

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H302	Harmful if swallowed
H373	May cause damage to organs through prolonged or repeated exposure
R22	Harmful if swallowed
Xn	Harmful

Ethane-1,2-diol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SDS EU (REACH Annex II) - Angus Fire

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Visit our website
www.fixfire.co.uk



Head Office
Mayflower House
Bodmin Road
Wyken
Coventry CV2 5DB

East Midlands & North East
(Regional Office)
Systems House
Old Station Close
Shepshed LE12 9NJ



your best alliance for compliance™



Visit our website

www.fixfire.co.uk



[linkedin.com/company/fixfire](https://www.linkedin.com/company/fixfire)



Main Switchboard: 024 7661 6699 • Freephone: 08000 891999 • Fax: 024 7662 1990

E-mail: compliance@fixfire.co.uk • Website: www.fixfire.co.uk

Fixfire® is a trade mark of Avansys LLP registered in UK No OC384483

© Avansys LLP 2019