Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Ethylene Glycol

Version number: GHS 5.0
Replaces version of: 2020-06-18 (4)

Revision: 2021-10-26

SECTION 1: Identification

1.1 Product identifier

Identification of the substance	**Ethylene Glycol**
CAS number	107-21-1
Product code(s)	0700027

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

Relevant identified uses	Industrial use

1.3 Details of the supplier of the safety data sheet

Barton Solvents, Inc
1920 NE Broadway P.O. BOX 221
Des Moines Iowa 50306-0221
United States

Telephone: +1 (515) 265-7998
Website: https://www.barsol.com/

1.4 Emergency telephone number

Emergency information service	CHEMTREC (800) 424-9300 (AVAILABLE 24 HOURS A DAY)

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.1O	acute toxicity (oral)	4	Acute Tox. 4	H302
A.3	serious eye damage/eye irritation	2B	Eye Irrit. 2B	H320
A.9	specific target organ toxicity - repeated exposure	2	STOT RE 2	H373

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word **Warning**
- Pictograms

GHS07, GHS08

- Hazard statements

H302	Harmful if swallowed.
H320	Causes eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

- Additional statements

0 % of the mixture consists of ingredient(s) of unknown toxicity (acute oral toxicity). 0 % of the mixture consists of ingredient(s) of unknown toxicity (acute dermal toxicity). 0 % of the mixture consists of ingredient(s) of unknown toxicity (acute inhalative toxicity).

- Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P337+P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents/container to industrial combustion plant.

2.3 Other hazards

Hazards not otherwise classified

May be harmful in contact with skin (GHS category 5: acutely toxic - dermal).

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	Ethane-1,2-diol
Identifiers	
CAS No	107-21-1
Molecular formula	$C_2H_6O_2$
Molar mass	62.07 $g/_{mol}$

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks or other ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. .

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Ceiling-C [ppm]	Ceiling-C [mg/m³]	Notation	Source
US	ethylene glycol	107-21-1	REL							appx-D	NIOSH REL
US	ethylene glycol	107-21-1	TLV®				10			i, aerosol	ACGIH® 2020
US	ethylene glycol	107-21-1	TLV®	25		50				vap	ACGIH® 2020

Notation

aerosol	as aerosols
appx-D	see Appendix D - Substances with No Established RELs
Ceiling-C	ceiling value is a limit value above which exposure should not occur
i	inhalable fraction
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified
vap	as vapors

Human health values

Relevant DNELs and other threshold levels				
Endpoint	**Threshold level**	**Protection goal, route of exposure**	**Used in**	**Exposure time**
DNEL	35 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	106 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Environment values

Relevant PNECs and other threshold levels				
Endpoint	**Threshold level**	**Organism**	**Environmental compartment**	**Exposure time**
PNEC	10 $^{mg}/_{l}$	aquatic organisms	freshwater	short-term (single instance)
PNEC	1 $^{mg}/_{l}$	aquatic organisms	marine water	short-term (single instance)
PNEC	199.5 $^{mg}/_{l}$	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	37 $^{mg}/_{kg}$	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	3.7 $^{mg}/_{kg}$	aquatic organisms	marine sediment	short-term (single instance)
PNEC	1.53 $^{mg}/_{kg}$	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Color	Colorless - clear
Particle	not relevant (liquid)
Odor	odorless

Other safety parameters

pH (value)	not determined
Melting point/freezing point	-12.69 °C at 1,013 hPa
Initial boiling point and boiling range	197.4 °C at 1,013 hPa
Flash point	115 °C at 1,013 hPa
Evaporation rate	Not determined
Flammability (solid, gas)	not relevant, (fluid)
Vapor pressure	0.75 mmHg at 51.1 °C
Density	9.31 $^{lb}/_{gal}$
Vapor density	this information is not available
Relative density	1.117 (water = 1)

Solubility(ies)

- Water solubility	1,000 $^{g}/_{l}$ at 20 °C

Partition coefficient

- n-octanol/water (log KOW)	-1.36 (ECHA)
- Soil organic carbon/water (log KOC)	0 (ECHA)

Auto-ignition temperature	412 °C at 1,013 hPa (ECHA)

Viscosity

- Dynamic viscosity	16.1 mPa s at 25 °C

Explosive properties	none
Oxidizing properties	none

9.2 Other information

Surface tension	48.4 $^{mN}/_{m}$ (20 °C) (ECHA)

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Oxidizers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Harmful if swallowed.

GHS of the United Nations, annex 4: May be harmful in contact with skin.

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes eye irritation.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Biodegradation

The substance is readily biodegradable. The relevant substances of the mixture are readily biodegradable.

12.2 Persistence and degradability

Process of degradability

Process	Degradation rate	Time
DOC removal	90 – 100 %	10 d

12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	-1.36 (ECHA)

12.4 Mobility in soil

Henry's law constant	0.013 $^{Pa\ m^3}/_{mol}$ at 25 °C
The Organic Carbon normalised adsorption coefficient	0 (ECHA)

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Only packagings which are approved (e.g. acc. to DOT) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN/NA Number

DOT — UN 3082

14.2 UN proper shipping name

DOT — Environmentally hazardous substance, liquid, n.o.s. (Ethylene Glycol)

14.3 Transport hazard class(es)

DOT — 9

14.4 Packing group

DOT — III

14.5 Environmental hazards — non-environmentally hazardous acc. to the dangerous goods regulations

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

not listed

List of substances subject to authorization (REACH, Annex XIV) / SVHC - candidate list

not listed

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation on persistent organic pollutants (POP)

Not listed.

Persistent organic pollutants (POP)

Not listed.

National regulations (United States)

Toxic Substance Control Act (TSCA) — substance is listed

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

not listed

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings				
Name of substance	**CAS No**	**Wt%**	**Remarks**	**Effective date**
Ethane-1,2-diol	107-21-1	100		1987-01-01

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
Ethane-1,2-diol	107-21-1		3	5000 (2270)

Legend
3 "3" indicates that the source is section 112 of the Clean Air Act

Right to Know Hazardous Substance List

- Toxic or Hazardous Substance List (MA-TURA)

listed in

- Hazardous Substances List (MN-ERTK)

listed in

- Hazardous Substance List (NJ-RTK)

listed in

- Hazardous Substance List (Chapter 323) (PA-RTK)

listed in

- Hazardous Substance List (RI-RTK)

listed in

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

⚠ **WARNING**: This product can expose you to ethylene glycol (ethanediol), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Name acc. to inventory	CAS No	Wt%	Type of the toxicity
ethylene glycol (ethanediol)	107-21-1	100	developmental

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	2	temporary or minor injury may occur
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive

Category	Rating	Description
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	1	material that, under emergency conditions, can cause significant irritation
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

National inventories

Country	Inventory	Status
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information, including date of preparation or last revision

Indication of changes (revised safety data sheet)

New: 07/19/2006; Updated 07/23/2015; Updated TLV Information 3/31/2017; NFPA Updated 06/18/2020; Updated Format 10/26/2021.

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT).

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.