

**SAFETY DATA SHEET**

Creation Date 02-Feb-2010

Revision Date 24-Dec-2021

Revision Number 5

**1. Identification****Product Name** Ethylene glycol**Cat No. :** E177-4; E177-20**CAS No** 107-21-1**Synonyms** Monoethylene glycol; 1,2-Ethanediol**Recommended Use** Laboratory chemicals.**Uses advised against** Food, drug, pesticide or biocidal product use.**Details of the supplier of the safety data sheet****Company**Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100**Emergency Telephone Number** CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887**2. Hazard(s) identification****Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                                      |            |
|------------------------------------------------------|------------|
| Acute oral toxicity                                  | Category 4 |
| Specific target organ toxicity (single exposure)     | Category 3 |
| Target Organs - Central nervous system (CNS).        |            |
| Specific target organ toxicity - (repeated exposure) | Category 2 |
| Target Organs - Kidney, Liver.                       |            |

**Label Elements****Signal Word**

Warning

**Hazard Statements**

Harmful if swallowed

May cause drowsiness or dizziness

May cause damage to organs through prolonged or repeated exposure



### Precautionary Statements

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Do not breathe dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

#### Response

Get medical attention/advice if you feel unwell

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

#### Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

#### Storage

Store in a well-ventilated place. Keep container tightly closed

Store locked up

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

WARNING. Reproductive Harm - <https://www.p65warnings.ca.gov/>.

## 3. Composition/Information on Ingredients

| Component       | CAS No   | Weight % |
|-----------------|----------|----------|
| Ethylene glycol | 107-21-1 | >95      |

## 4. First-aid measures

|                                            |                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.                                                                                                                                                                                                                            |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.                                                                                                                                                                                                                    |
| <b>Inhalation</b>                          | Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration. |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Call a physician or poison control center immediately.                                                                                                                                                                                                                                                             |
| <b>Most important symptoms and effects</b> | Difficulty in breathing.                                                                                                                                                                                                                                                                                                                   |
| <b>Notes to Physician</b>                  | Treat symptomatically                                                                                                                                                                                                                                                                                                                      |

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

**Unsuitable Extinguishing Media** No information available

**Flash Point** 111 °C / 231.8 °F

**Method -** DIN 51758

**Autoignition Temperature** 413 °C / 775.4 °F

**Explosion Limits**

**Upper** 15.30 vol %

**Lower** 3.20 vol %

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**

Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

**Health**  
2

**Flammability**  
1

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment as required.

**Environmental Precautions** Should not be released into the environment. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

## 7. Handling and storage

**Handling** Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not breathe mist/vapors/spray. Avoid contact with skin, eyes or clothing.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents. Strong acids. Strong bases. Aldehydes.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component       | ACGIH TLV                                                 | OSHA PEL                                                              | NIOSH IDLH | Mexico OEL (TWA)               |
|-----------------|-----------------------------------------------------------|-----------------------------------------------------------------------|------------|--------------------------------|
| Ethylene glycol | TWA: 25 ppm<br>STEL: 50 ppm<br>STEL: 10 mg/m <sup>3</sup> | (Vacated) Ceiling: 50 ppm<br>(Vacated) Ceiling: 125 mg/m <sup>3</sup> |            | Ceiling: 100 mg/m <sup>3</sup> |

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists

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OSHA - Occupational Safety and Health Administration

**Engineering Measures** Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

|                                        |                                            |
|----------------------------------------|--------------------------------------------|
| Physical State                         | Viscous liquid Liquid                      |
| Appearance                             | Colorless                                  |
| Odor                                   | Odorless                                   |
| Odor Threshold                         | No information available                   |
| pH                                     | 5.5-7.5 50% aq. sol                        |
| Melting Point/Range                    | -13 °C / 8.6 °F                            |
| Boiling Point/Range                    | 196 - 198 °C / 384.8 - 388.4 °F @ 760 mmHg |
| Flash Point                            | 111 °C / 231.8 °F                          |
| Method -                               | DIN 51758                                  |
| Evaporation Rate                       | No information available                   |
| Flammability (solid,gas)               | Not applicable                             |
| Flammability or explosive limits       |                                            |
| Upper                                  | 15.30 vol %                                |
| Lower                                  | 3.20 vol %                                 |
| Vapor Pressure                         | 0.12 mmHg @ 20 °C                          |
| Vapor Density                          | 2.14 (Air = 1.0)                           |
| Specific Gravity                       | 1.113                                      |
| Solubility                             | miscible                                   |
| Partition coefficient; n-octanol/water | No data available                          |
| Autoignition Temperature               | 413 °C / 775.4 °F                          |
| Decomposition Temperature              | > 500°C                                    |
| Viscosity                              | 21 cP (20°C)                               |
| Molecular Formula                      | C2 H6 O2                                   |
| Molecular Weight                       | 62.06                                      |

## 10. Stability and reactivity

|                                  |                                                                     |
|----------------------------------|---------------------------------------------------------------------|
| Reactive Hazard                  | None known, based on information available                          |
| Stability                        | Hygroscopic.                                                        |
| Conditions to Avoid              | Incompatible products. Excess heat. Exposure to moist air or water. |
| Incompatible Materials           | Strong oxidizing agents, Strong acids, Strong bases, Aldehydes      |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )             |
| Hazardous Polymerization         | Hazardous polymerization does not occur.                            |

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

| Component       | LD50 Oral          | LD50 Dermal                                                                            | LC50 Inhalation             |
|-----------------|--------------------|----------------------------------------------------------------------------------------|-----------------------------|
| Ethylene glycol | 7712 mg/kg ( Rat ) | LD50 = 9530 µL/kg ( Rabbit )<br>LD50 = 10600 mg/kg ( Rat )<br>LD50 > 3500 mg/kg (mice) | LC50 > 2.5 mg/L ( Rat ) 6 h |

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** May cause skin, eye, and respiratory tract irritation

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component       | CAS No   | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------------|----------|------------|------------|------------|------------|------------|
| Ethylene glycol | 107-21-1 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Central nervous system (CNS)  
**STOT - repeated exposure** Kidney Liver

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains. .

| Component       | Freshwater Algae                                               | Freshwater Fish                                                                                                                                                                                                                                                                            | Microtox   | Water Flea                              |
|-----------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------|
| Ethylene glycol | EC50: 6500 - 13000 mg/L, 96h (Pseudokirchneriella subcapitata) | LC50: 14 - 18 mL/L, 96h static (Oncorhynchus mykiss)<br>LC50: = 27540 mg/L, 96h static (Lepomis macrochirus)<br>LC50: = 40761 mg/L, 96h static (Oncorhynchus mykiss)<br>LC50: 40000 - 60000 mg/L, 96h static (Pimephales promelas)<br>LC50: = 16000 mg/L, 96h static (Poecilia reticulata) | Not listed | EC50: = 46300 mg/L, 48h (Daphnia magna) |

|  |  |                                                  |  |  |
|--|--|--------------------------------------------------|--|--|
|  |  | LC50: = 41000 mg/L, 96h<br>(Oncorhynchus mykiss) |  |  |
|--|--|--------------------------------------------------|--|--|

**Persistence and Degradability** Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

| Component       | log Pow |
|-----------------|---------|
| Ethylene glycol | -1.93   |

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

**DOT** Not regulated  
**TDG** Not regulated  
**IATA** Not regulated  
**IMDG/IMO** Not regulated

### 15. Regulatory information

#### United States of America Inventory

| Component       | CAS No   | TSCA | TSCA Inventory notification -<br>Active-Inactive | TSCA - EPA Regulatory<br>Flags |
|-----------------|----------|------|--------------------------------------------------|--------------------------------|
| Ethylene glycol | 107-21-1 | X    | ACTIVE                                           | -                              |

#### Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA 12(b)** - Notices of Export Not applicable

#### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component       | CAS No   | DSL | NDL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|-----------------|----------|-----|-----|-----------|-------|------|------|------|-------|----------|
| Ethylene glycol | 107-21-1 | X   | -   | 203-473-3 | X     | X    | X    | X    | X     | KE-13169 |

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

#### U.S. Federal Regulations

##### SARA 313

| Component       | CAS No   | Weight % | SARA 313 - Threshold<br>Values % |
|-----------------|----------|----------|----------------------------------|
| Ethylene glycol | 107-21-1 | >95      | 1.0                              |

**SARA 311/312 Hazard Categories** See section 2 for more information

**CWA (Clean Water Act)** Not applicable

**Clean Air Act**

| Component       | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|-----------------|-----------|-------------------------|-------------------------|
| Ethylene glycol | X         |                         | -                       |

**OSHA** - Occupational Safety and Health Administration Not applicable

**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component       | Hazardous Substances RQs | CERCLA EHS RQs |
|-----------------|--------------------------|----------------|
| Ethylene glycol | 5000 lb                  | -              |

**California Proposition 65** This product contains the following Proposition 65 chemicals.

| Component       | CAS No   | California Prop. 65 | Prop 65 NSRL | Category      |
|-----------------|----------|---------------------|--------------|---------------|
| Ethylene glycol | 107-21-1 | Developmental       | -            | Developmental |

#### U.S. State Right-to-Know Regulations

| Component       | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-----------------|---------------|------------|--------------|----------|--------------|
| Ethylene glycol | X             | X          | X            | X        | -            |

#### U.S. Department of Transportation

Reportable Quantity (RQ): Y  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

#### Other International Regulations

**Mexico - Grade** Slight risk, Grade 1

**Authorisation/Restrictions according to EU REACH**

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

| Component       | CAS No   | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-----------------|----------|----------|------------------------------|---------------------------|--------------------------------------------|
| Ethylene glycol | 107-21-1 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

| Component       | CAS No   | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-----------------|----------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| Ethylene glycol | 107-21-1 | Not applicable                                                                            | Not applicable                                                                           | Not applicable             | Not applicable                     |

## 16. Other information

**Prepared By** Regulatory Affairs  
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**Creation Date** 02-Feb-2010

**Revision Date** 24-Dec-2021**Print Date** 24-Dec-2021**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**