

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

1.1. Product identifier

| | |
|------------------------------|-----------------------------|
| Name of the substance | Ethylene glycol |
| Identification number | 603-027-00-1 (Index number) |
| Registration number | - |
| Synonyms | 1,2-Ethenediol |
| Issue date | 22-August-2018 |
| Version number | 02 |
| Revision date | 08-February-2019 |
| Supersedes date | 22-August-2018 |

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

| | |
|-----------------------------|--|
| Identified uses | General purpose solvent. |
| Uses advised against | Use in accordance with manufacturer's recommendations. |

1.3. Details of the supplier of the safety data sheet

| | |
|---------------------|---|
| Company name | Greenfield Global USA Inc. |
| Address | 1101 Isaac Shelby Drive Shelbyville, KY 40065 USA |
| Telephone | 502.232.7600 |
| Fax | 502.633.6100 |

| | |
|---------------------|---|
| Company name | Greenfield Global USA Inc. |
| Address | 58 Vale Road Brookfield, CT 06804 USA |
| Telephone | 203.740.3471 |
| Fax | 203.740.3481 |

| | |
|-------------------------------|---------------------------------------|
| Emergency phone number | |
| USA | CHEMTREC: 1.800.424.9300 (CCN 17213) |
| International | CHEMTREC: +1.703.527.3887 (CCN 17213) |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

| | | |
|---|---------------------|---|
| Health hazards | | |
| Acute toxicity, oral | Category 4 | H302 - Harmful if swallowed. |
| Specific target organ toxicity - repeated exposure (oral) | Category 2 (Kidney) | H373 - May cause damage to organs (Kidney) through prolonged or repeated exposure by ingestion. |

Hazard summary Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure. Occupational exposure to the substance or mixture may cause adverse health effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Ethylene glycol

Hazard pictograms



Signal word Warning

Hazard statements

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

Precautionary statements

Prevention

P260 Do not breathe mist or vapour.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Response

P330 Rinse mouth.
P314 Get medical advice/attention if you feel unwell.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information None.

2.3. Other hazards This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|------------------------|-----------------------------------|-----------------------|------------------------|--------------|-------|
| Ethylene glycol | 100 | 107-21-1 203-473-3 | - | 603-027-00-1 | # |
| Classification: | Acute Tox. 4;H302, STOT RE 2;H373 | | | | |

List of abbreviations and symbols that may be used above

#: This substance has been assigned Community workplace exposure limit(s).

Composition comments All concentrations are in percent by weight unless otherwise indicated.

SECTION 4: First aid measures

General information

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact Rinse with water. Get medical attention if irritation develops and persists.
Ingestion Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

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

Convulsions. Dizziness. Nausea, vomiting. Abdominal pain.

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

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media Water spray. Alcohol resistant foam. Powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides.

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures

Move containers from fire area if you can do so without risk.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapour. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

For emergency responders

Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Use water spray to reduce vapours or divert vapour cloud drift. This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s)

General purpose solvent.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits****Ireland
Material**

Ethylene glycol (CAS 107-21-1)

Type

STEL

Value

52 ppm

Form

Vapour.

TWA

20 mg/m3

Vapour.

**Ireland. Occupational Exposure Limits
Material**

Ethylene glycol (CAS 107-21-1)

Type

STEL

Value

104 mg/m3

Form

Vapour.

TWA

10 mg/m3

Particulate.

**EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU
Material**

Ethylene glycol (CAS 107-21-1)

Type

STEL

Value

104 mg/m3

40 ppm

TWA

52 mg/m3

20 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

Exposure guidelines

Ireland Exposure Limit Values: Skin designation

Ethylene glycol (CAS 107-21-1)

Can be absorbed through the skin.

8.2. Exposure controls

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

General information

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

- Hand protection

Wear appropriate chemical resistant gloves. Nitrile, butyl rubber or neoprene gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

- Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapour cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Hygiene measures

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state

Liquid.

Form

Liquid.

Colour

Not available.

Odour

Not available.

Odour threshold

Not available.

pH

Not available.

Melting point/freezing point

-13 °C (8.6 °F)

Initial boiling point and boiling range

197.3 °C (387.1 °F)

Flash point

111.0 °C (231.8 °F) Closed cup

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

Flammability limit - upper (%)

Not available.

Vapour pressure

0.11 hPa (20 °C (68 °F))

Vapour density

2.14

Relative density

1.113 (25 °C (77 °F))

Solubility(ies)

miscible

Auto-ignition temperature

397.78 °C (748 °F)

Decomposition temperature

Not available.

Viscosity

Not available.

Explosive properties

Not explosive.

Oxidising properties

Not oxidising.

9.2. Other information

Molecular formula

C2-H6-O2

Molecular weight 62.07 g/mol

SECTION 10: Stability and reactivity

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|--|---|
| 10.1. Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| 10.2. Chemical stability | Material is stable under normal conditions. |
| 10.3. Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| 10.4. Conditions to avoid | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials. |
| 10.5. Incompatible materials | Strong oxidising agents. |
| 10.6. Hazardous decomposition products | No hazardous decomposition products are known. |

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

| | |
|--------------|---|
| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Direct contact with eyes may cause temporary irritation. |
| Ingestion | Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure by ingestion. |

Symptoms Convulsions. Dizziness. Nausea, vomiting. Abdominal pain.

11.1. Information on toxicological effects

Acute toxicity Harmful if swallowed.

| Product | Species | Test Results |
|---|---|--------------|
| Ethylene glycol (CAS 107-21-1) | | |
| Acute Dermal LD50 | Rabbit | 9530 mg/kg |
| Skin corrosion/irritation | Based on available data, the classification criteria are not met. | |
| Serious eye damage/eye irritation | Based on available data, the classification criteria are not met. | |
| Respiratory sensitisation | Due to partial or complete lack of data the classification is not possible. | |
| Skin sensitisation | Based on available data, the classification criteria are not met. | |
| Germ cell mutagenicity | Based on available data, the classification criteria are not met. | |
| Carcinogenicity | Based on available data, the classification criteria are not met. | |
| Reproductive toxicity | Based on available data, the classification criteria are not met. | |
| Specific target organ toxicity - single exposure | Based on available data, the classification criteria are not met. | |
| Specific target organ toxicity - repeated exposure | May cause damage to organs through prolonged or repeated exposure by ingestion. | |
| Aspiration hazard | Due to partial or complete lack of data the classification is not possible. | |
| Mixture versus substance information | The product is a substance. | |
| Other information | May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. | |

SECTION 12: Ecological information

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|--|--|
| 12.1. Toxicity | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |
| 12.2. Persistence and degradability | The product is readily biodegradable. |
| 12.3. Bioaccumulative potential | No data available for this product. |
| Bioconcentration factor (BCF) | Not available. |
| 12.4. Mobility in soil | This product is miscible in water. |
| 12.5. Results of PBT and vPvB assessment | This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII. |
| 12.6. Other adverse effects | None known. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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|-------------------------------------|--|
| Residual waste | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |
| EU waste code | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Disposal methods/information | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Special precautions | Dispose in accordance with all applicable regulations. |

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization (Comité Européen de Normalisation).
CLP: Regulation No. 1272/2008.
DNEL: Derived No-Effect Level.
ECHA: European Chemical Agency.
IATA: International Air Transport Association.
IBC: Intermediate Bulk Container.
IMDG: International Maritime Dangerous Goods.
MARPOL: International Convention for the Prevention of Pollution from Ships.
PBT: Persistent, bioaccumulative, toxic.
PNEC: Predicted No-Effect Concentration.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short-Term Exposure Limit.
TWA : Time Weighed Average.
vPvB: very Persistent, very Bioaccumulative.
C&L Inventory database.

References

Information on evaluation method leading to the classification of mixture

Not applicable.

Full text of any H-statements not written out in full under Sections 2 to 15

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

Training information

Follow training instructions when handling this material.

Disclaimer

This product is subject to Greenfield Global USA Inc.'s terms and conditions, which can be found at <http://www.greenfield.com/tc-po-us/>. Greenfield cannot anticipate all conditions under which this information and this product, or the products of other manufacturers in combination with this product, may be used. The user is responsible for the proper and safe use, handling, storage and disposal of the product, and assumes liability for any loss, injury, damage or expense arising from any failure to do so. The data in this sheet is based on information and experience available at the time of writing.