

SECTION 1: Identification of the Substance / Mixture and of the Company / Undertaking**1.1. Product Identifier**

Substance name : Mono ethylene glycol
EC Index-No. : 603-027-00-1
EC-No. : 203-473-3
CAS-No. : 107-21-1
REACH registration No : 01-2119456816-28
Type of product : Pure substance
Formula : C₂H₆O₂

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

1.3. Details of the Distributor of the Safety Data Sheet

Company Name : GreenSol Limited
Address : #39-41 Marryat Street, San Fernando, Trinidad, West Indies
Telephone : +1(868) 225-4858
Mobile : +1(868) 720-2517
Email : sdeokiesingh@greensolltd.com

1.4. Emergency Telephone Number

Emergency Number : +1(868) 720-2517 (GREENSOL)
: +1(800) 424-9300 (CHEMTREC)

SECTION 2: Hazard Identification**2.1. Classification of the Substance or Mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Acute toxicity (oral), Category 4 : H302
Specific target organ toxicity - : H373
Repeated exposure, Category 2
Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

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

2.2. Label Elements

Hazard Pictogram :



GHS07

GHS08

Signal Word :

WARNING

Hazard Statement :

 H302 - Harmful if swallowed.
 H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral, if swallowed).

Precautionary Statement :

 P264 - Wash hands thoroughly after handling.
 P270 - Do not eat, drink or smoke when using this product.
 P301+P312 - IF SWALLOWED: Call a doctor, a POISON CENTER if you feel unwell.
 P314 - Get medical advice/attention if you feel unwell.
 P330 - Rinse mouth.
 P260 - Do not breathe dusts or mists.

Listed in Annex VI :

EC Index-No. : 603-027-00-1

2.3. Other Hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
 This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition / Information on Ingredients
3.1. Substances

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Mono ethylene glycol	(CAS-No.) 107-21-1 (EC-No.) 203-473-3 (EC Index-No.) 603-027-00-1 (REACH-no) 01-2119456816-28	100	Acute Tox. 4 (Oral), H302 STOT RE 2, H373

Full text of H-statements: see section 16

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 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/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Dry/sore throat. Irritation of the nasal mucous membranes.
- Symptoms/effects after eye contact : ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue. Redness of the eye tissue. Lacrimation.
- Symptoms/effects after ingestion : AFTER INGESTION 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.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed

Treat symptomatically.

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".
- Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for Firefighters

- Precautionary measures : 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 : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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 : Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection"

6.2. Environmental Precautions

Avoid release to the environment.

6.3. Methods and Material for Containment and Cleaning up

For containment : Contain released product, 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 "Materialhandling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other Information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling & 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. In finely divided state: use spark- /explosion proof 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. Always wash hands after handling the product.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions : Store in a well-ventilated place. Keep cool.

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Information 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.

SECTION 8: Exposure Controls / Personal Protection

8.1. Control Parameters

Mono ethylene glycol (107-21-1)

DNEL/DMEL (Workers)

Long-term - systemic effects, dermal	: 106 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	: 35 mg/m ³

DNEL/DMEL (General population)

Long-term - systemic effects, dermal	: 53 mg/kg bodyweight/day
Long-term - local effects, inhalation	: 7 mg/m ³

PNEC (Water)

PNEC aqua (freshwater)	: 10 mg/l
PNEC aqua (marine water)	: 1 mg/l
PNEC aqua (intermittent, freshwater)	: 10 mg/l
PNEC aqua (intermittent, marine water)	: 10 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)	: 20,9 mg/kg dwt
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PNEC (Soil)

PNEC soil	: 1,53 mg/kg dwt
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PNEC (STP)

PNEC sewage treatment plant	: 199,5 mg/l
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8.2. Exposure Controls

EC Index-No.	: 603-027-00-1
Appropriate engineering controls	: Ensure good ventilation of the work station.
Materials for protective clothing	: GIVE EXCELLENT RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. polyethylene. PVC. Tetrafluoro ethylene. viton. polyethylene/ethylene vinyl alcohol. GIVE GOOD RESISTANCE: chlorinated polyethylene. polyurethane. PVA

Hand protection:
Protective gloves

Viscosity, Dynamic	: 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

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical Stability	: Stable under normal conditions.
Possibility of Hazardous Reactions	: None under recommended storage and handling conditions (see section 7).
Conditions to Avoid	: Direct sunlight. Extremely high or low temperatures
Incompatible Materials	: No additional information available
Hazardous Decomposition Products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute Toxicity (Oral)	: Harmful if swallowed
Acute Toxicity (Dermal)	: Not classified
Acute Toxicity (Inhalation)	: Not classified
Skin corrosion/irritation	: Not classified pH: 6 - 7,5
Serious eye damage/irritation	: Not classified pH: 6 - 7,5
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: May cause damage to organs (kidneys) through prolonged or repeated exposure (oral, if swallowed).

SECTION 12: Ecological Information

12.1. Toxicity

Ecology – general	:	The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Ecology - air	:	Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). TA-Luft Klasse 5.2.5/I.
Ecology - water	:	Mild water pollutant (surface water). Groundwater 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
Acute aquatic toxicity	:	Not classified
Chronic aquatic toxicity	:	Not classified

Mono ethylene glycol (107-21-1)

LC50 fish 1	:	40761 mg/l
EC50 Daphnia 1	:	10000 mg/l

12.2. Persistence and Degradability

Persistence and degradability	:	Readily biodegradable in water. Biodegradable in the soil.
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 % ThOD

12.3. Bio accumulative potential

BCF fish 1	:	10
BCF other aquatic organisms 1	:	0,21 – 0,6
BCF other aquatic organisms 2	:	190
Log Pow	:	-1,34
Bioaccumulative potential	:	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in Soil

Surface tension	:	0,048 N/m 20° C
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12.5. Results of PBT and vPvB assessment

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 13: Disposal Considerations**13.1. Waste Treatment Methods**

Waste Treatment Methods	:	Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging 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 04 01* - aqueous washing liquids and mother liquors
Waste Treatment Methods	:	Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transportation Information

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

14.1. UN Number

Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
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14.2. UN Proper Shipping Name

Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
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14.3. Transport Hazard Class (es)

Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
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14.4. Packing Group

Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
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14.5. Environment Hazards

Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
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No supplementary information available

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

Mono ethylene glycol is not on the REACH Candidate List

Mono ethylene glycol is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Mono ethylene glycol is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

15.2. Chemical Safety Assessment

A chemical safety assessment has been carried out

SECTION 16: Other Information

Abbreviations and acronyms:

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
ATE	: Acute Toxicity Estimate
BCF	: Bioconcentration factor
CLP	: Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	: Derived Minimal Effect level
DNEL	: Derived-No Effect Level
DPD	: Dangerous Preparations Directive 1999/45/EC
DSD	: Dangerous Substances Directive 67/548/EEC
EC50	: Median effective concentration
IARC	: International Agency for Research on Cancer
IATA	: International Air Transport Association
IMDG	: International Maritime Dangerous Goods
LC50	: Median lethal concentration
LD50	: Median lethal dose
LOAEL	: Lowest Observed Adverse Effect Level
NOAEC	: No-Observed Adverse Effect Concentration
OECD	: Organisation for Economic Co-operation and Development
PBT	: Persistent Bioaccumulative Toxic
NOAEL	: No-Observed Adverse Effect Level
NOEC	: No-Observed Effect Concentration
PNEC	: Predicted No-Effect Concentration
REACH	: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	: Regulations concerning the International Carriage of Dangerous Goods by Rai
SDS	: Safety Data Sheet
STP	: Sewage treatment plant
TLM	: Median Tolerance Limit
vPvB	: Very Persistent and Very Bioaccumulative
LOAEL	: Lowest Observed Adverse Effect Level
NOAEC	: No-Observed Adverse Effect Concentration

Full text of 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.

Notice to Reader:

This SDS provides the information contained in this document in good faith but makes no representation as to its accuracy. This document is intended solely to guide the safe handling of the material by a properly trained individual. The final determination of the suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be handled with caution. Although some hazards are described, it cannot be guaranteed that these are the only hazards that exist.

Version	Date of Change	Change Description	Responsible Person
2.2	11-01-2021	Updated information in Section 9.1: Viscosity (kinematic and dynamic)	Laboratory Coordinator