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## SECTION 1: COMPANY AND PRODUCT INFORMATION

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### 1.1 Product identifiers

Product name : Ethylene Glycol  
Product code : 40570004  
CAS number : 107-21-1  
Synonyms : 1,2-Ethanediol

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

Identified uses : For research and laboratory use only.

### 1.3 Details of the supplier of the safety data sheet

Address : Genelix International Inc, dba bioWORLD  
4150 Tuller Rd. Suite 228  
Dublin, OH 43017  
Email : info@buffersandreagents.com  
Phone : 614-792-8680, Toll free: 1-888-bio-PLUS  
Fax : 614-792-8685

### 1.4 Emergency telephone number

Emergency phone : 1-888-bio-PLUS

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## SECTION 2: HAZARDS IDENTIFICATION

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### 2.1 Classification of substance or mixture

Acute toxicity, Oral (Category 4), H302  
Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney, H373

### 2.2 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302  
Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney, H373

### 2.3 Label elements and precautionary statements

Pictogram : 

Signal word : Warning

Hazard statement(s) : H302 - Harmful if swallowed.  
H373 - May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statement(s) : P260 - Do not breathe dust/fume/gas/mist/vapors/spray.  
P264 - Wash skin thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P301+312+330 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.  
P314 - Get medical advice/attention if you feel unwell.  
P501 - Dispose of contents/container to an approved waste disposal plant.

## 2.4 Hazards not otherwise classified (HNOC) or not covered by GHS

No unclassified hazards known.

## 2.5 NFPA Rating

Health hazard : 1  
Fire hazard : 1  
Reactivity hazard : 0

## 2.6 HMIS Rating

Health hazard : 1  
Chronic health hazard : \*  
Reactivity hazard : 0  
Flammability : 1  
Physical hazard : 0

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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### 3.1 Substances

Substance	CAS#	EC#	Concentration
Ethylene glycol M.F: C <sub>2</sub> H <sub>6</sub> O <sub>2</sub> M.W: 62.07 g/mol	107-21-1	203-473-3	<=100%

### 3.2 Hazardous components & classification

Acute Tox. 4; STOT RE 2; H302, H373

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## SECTION 4: FIRST AID MEASURES

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### 4.1 Description of first aid measures

#### General advice

Consult a physician if symptoms are severe or persistent. Provide this data sheet to medical personnel. If product is spilled or leaked, evacuate area.

#### In case of inhalation

If inhaled, move person to fresh air and monitor breathing. If not breathing, give artificial ventilation. Consult a physician if symptoms are severe or persistent.

#### In case of skin contact

Immediately wash with excess soap and water. If spilled on clothing, remove all affected clothing. Consult a physician if symptoms are severe or persistent.

#### In case of eye contact

Flush eyes with water or eye wash solution as a precaution for 15 minutes. Consult a physician if symptoms are severe or persistent.

#### **In case of ingestion**

Only induce vomiting if recommended by medical personnel. If subject is unconscious, do not give anything by mouth. If conscious, rinse mouth with water. Consult a physician if symptoms are severe or persistent.

#### **4.2 Most important symptoms and effects, both acute and delayed**

All known important symptoms are described in Section 2 and/or Section 11. No other important symptoms to report.

#### **4.3 Indication of any immediate medical attention and special treatment needed**

No special treatment indicated. Provide treatment in accordance with exhibited systems.

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### **SECTION 5: FIREFIGHTING MEASURES**

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#### **5.1 Suitable extinguishing media**

Water spray, alcohol-resistant foam, dry chemical, and carbon dioxide extinguishers are suitable.

#### **5.2 Unsuitable extinguishing media**

No known unsuitable extinguishing media.

#### **5.3 Special hazards arising from the substance**

No special hazards are known to exist regarding combustion of this product.

#### **5.4 Advice for firefighters**

Wear protective gear, such as self-contained breathing apparatus, if necessary

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### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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#### **6.1 Personal precautions, protective equipment and emergency procedures**

Provide suitable ventilation. Use any necessary personal protective equipment. Avoid contact with skin and eyes, and avoid creation and inhalation of vapor or dust. Keep all unnecessary personnel away.

**For personal protection see section 8**

#### **6.2 Environmental precautions**

Prevent product from entering public sewers and waterways.

#### **6.3 Methods and material for containment and cleaning up**

Use inert absorbent material to absorb any spilled or leaked product. Keep in suitable, closed containers for disposal.

**For proper disposal see section 13**

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### **SECTION 7: HANDLING AND STORAGE**

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#### **7.1 Precautions for safe handling**

Provide suitable ventilation. Wear any necessary personal protective equipment.

**For precautions see section 2**

#### **7.2 Conditions for safe storage, including any incompatibilities**

Storage conditions : Store upright, closed container in arid, ventilated environment.  
Hygroscopic

Incompatible materials : Strong acids, strong oxidizing agents, strong bases, aldehydes, and aluminum are incompatible with this product.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 8.1 Control parameters

Ethylene Glycol, CAS No.: 107-21-1

C: 100 mg/m<sup>3</sup>. Basis: USA. ACGIH Threshold Limit Values (TLV). Remarks: Upper Respiratory Tract irritation, eye irritation, adopted values or notations enclosed are those for which changes are proposed in the NIC. See Notice of Intended Changes (NIC), not classifiable as a human carcinogen.

C: 40 ppm, 100 mg/m<sup>3</sup>. Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107).

NOTE: See Appendix D - Substances with No Established RELs

### 8.2 Engineering controls

Follow good industrial hygiene and safety practices when handling product.

### 8.3 Personal protective equipment

- Eye/face protection : Use only government-approved safety glasses with side-shields.
- Skin protection : Use gloves when handling product. Inspect gloves before use to ensure suitability for use. Remove without exposing skin to the gloves outer surface. Discard used gloves according to all pertinent laws and/or current good practices (cGXP). Wash hands with soap and water.
- Body protection : Wear appropriate clothing. Ensure clothing is in good condition, with no holes or tears. When selecting clothing, consider the concentration and amount of substance to be handled.
- Respiratory protection : Use only approved respirators and components which comply with CDC and NIOSH (US) or CEN (EU) regulations. Required only when vapors or aerosols are created.
- Control of environmental exposure : Prevent product from entering the environment, especially through public sewers or waterways.
- General hygiene considerations : Comply with general industrial hygiene practice guidelines.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

- a) Appearance : Colorless
- b) Physical states : Liquid
- c) Odor : Not available
- d) Odor threshold : Not available
- e) Melting point : -13°C
- f) Boiling point range : 196-198°C
- g) pH : Not available

h)	Density	: Not available
i)	Flash point	: 111°C - closed cup
j)	Evaporation rate	: 1
k)	Flammability	: Not available
l)	Upper/lower flammability or explosive limits:	: Upper explosion limit: 15.3 %(V) Lower explosion limit: 3.2 %(V)
m)	Vapor pressure	: 0.11 hPa (0.08 mmHg) @ 20°C
n)	Vapor density	: 2.14 - (Air = 1.0)
o)	Relative density	: 1.113 g/mL @ 25°C
p)	Water solubility	: completely miscible, soluble
q)	Partition coefficient:n-octanol/water	: log Pow: -1.36
r)	Autoignition temperature	: 400°C Auto-flammability
s)	Decomposition temperature	: Not available
t)	Kinematic viscosity	: Not available
u)	Explosive properties	: Not available
v)	Oxidizing properties	: Not available
w)	Solubility in other solvents	: Not available
x)	Surface tension	: Not available

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## SECTION 10: STABILITY AND REACTIVITY

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### 10.1 Reactivity

No special reactivity is known.

### 10.2 Chemical stability

Product is stable when stored and used as recommended.

### 10.3 Stability note(s)

No special or unusual instability known.

### 10.4 Polymerization

No known polymerization.

### 10.5 Possibility of hazardous reactions

No hazardous reactions are known.

### 10.6 Incompatible materials

Strong acids, strong oxidizing agents, strong bases, aldehydes, and aluminum are incompatible with this product.

### 10.7 Hazardous decomposition products

Carbon oxides can form if fire occurs.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### 11.1 Acute toxicity

LD50 Oral : Rat - 4700 mg/kg

LD50 Dermal : Rabbit - 10626 mg/kg

LC50 Inhalation : No toxicity data available.

**11.2 Skin corrosion/irritation**

No skin irritation (Rabbit)

**11.3 Serious eye damage/eye irritation**

Mild eye irritation (Rabbit)

**11.4 Respiratory or skin sensitization**

No sensitization data available.

**11.5 Germ cell mutagenicity**

No mutagenicity data available.

**11.6 Carcinogenicity**

IARC : Product and components are not regulated by the IARC.

ACGIH : Product and components are not regulated by the ACGIH.

NTP : Product and components are not regulated by the NTP.

OSHA : Product and components are not regulated by OSHA.

**11.7 Reproductive toxicity**

Laboratory experiments have shown teratogenic effects and overexposure may cause reproductive disorder(s).

**11.8 Specific target organ toxicity – single exposure**

No specific organ toxicity data available.

**11.9 Specific target organ toxicity – repeated exposure**

Oral - May cause damage to organs (Kidney) through prolonged or repeated exposure.

**11.10 Aspiration hazard**

No aspiration hazard data available.

**11.11 Additional Information**

RTECS: KW2975000.

When ingested early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany, and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain and liver damage., Exposure to and/or consumption of alcohol may increase toxic effects.

Central nervous system - Irregularities - Based on Human Evidence

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**SECTION 12: ECOLOGICAL INFORMATION**

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**12.1 Toxicity**

No ecological toxicity data available.

**12.2 Aquatic toxicity**

Species: Rainbow Trout (*Oncorhynchus mykiss*). Exposure: 96 hours. Result: LC50 18500 mg/L  
Species: Golden Orfe (*Leuciscus idus*). Exposure: 48 hours. Result: LC50 > 10000 mg/L  
Species: Fathead Minnow (*Pimephales promelas*). Exposure: 96 hours. Result: NOEC 39140 mg/L  
Species: Water Flea (*Daphnia magna*). Exposure: 24 hours. Result: EC50 74000 mg/L  
Species: Water Flea (*Daphnia magna*). Exposure: 48 hours. Result: NOEC 24000 mg/L  
Species: Water Flea (*Daphnia magna*). Exposure: 48 hours. Result: LC50 41000 mg/L

### 12.3 Persistence and degradability

Ratio BOD/ThBOD = 0.78%

### 12.4 Bioaccumulative potential

Does not bioaccumulate.

### 12.5 Mobility in soil

No soil mobility data available.

### 12.6 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment is not required/was not conducted.

### 12.7 Other adverse effect

No other adverse effect data available.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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### 13.1 Product

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

### 13.2 Packaging

Packaging should be disposed of in the same manner as unused product.

### 13.3 Recommendation

Disposal must be made according to official regulations.

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## SECTION 14: TRANSPORTATION INFORMATION

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### 14.1 DOT (US)

UN#3082

Class: 9

Packing group: III

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol).

Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No

### 14.2 IMDG

Not a dangerous good under IMDG regulations.

### 14.3 IATA

Not a dangerous good under IATA regulations.

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## SECTION 15: REGULATORY INFORMATION

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### 15.1 SARA

SARA 302: This product and components are not subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This product contains components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

Ethylene glycol CAS No.: 107-21-1

SARA 311/312: Acute Health Hazard, Chronic Health Hazard

### 15.2 Clean water act (CWA)

No chemicals are present in this product that are subject to regulation under the Clean Water Act.

### 15.3 Right to know components

Massachusetts : Ethylene glycol CAS No.: 107-21-1

Pennsylvania : Ethylene glycol CAS No.: 107-21-1

New Jersey : Ethylene glycol CAS No.: 107-21-1

California : This product contains no chemicals which are known to the State of  
proposition 65 California to cause cancer, or birth defects or other reproductive harm.  
components

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## SECTION 16: OTHER INFORMATION

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### 16.1 Disclaimer

This product is offered by Plantmedia for research, laboratory or further manufacturing use. Not for human use or consumption. The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchant-ability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall buffersandreagents.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if buffersandreagents.com has been advised of the possibility of such damages.

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### 16.2 Preparation Information

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