SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2021
Date Updated: February 22, 2021

SECTION 1. - - - - - - - - - PRODUCT AND COMPANY IDENTIFICATION- - - - - - - - - -

Product Name	Ethylene glycol
Product Code(s)	ED0199
Recommended Use	For Laboratory Research Use Only Not for Human or Animal Drug Use
Supplier	Bio Basic Inc.
Address	20 Konrad Crescent, Markham, Ontario, Canada, L3R 8T4
Telephone	(905) 474 4493
Fax	(905) 474 5794
For Chemical Emergency Phone#	(416) 995 9730

SECTION 2. - - - - - - - - - - HAZARDS IDENTIFICATION - - - - - - - - -

GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Acute toxicity, Oral (Category 4), H302
Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney, H373 For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including 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/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor 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.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - - -

Chemical Name	EC No.	CAS-No	Weight %
Ethylene glycol	203-473-3	107-21-1	<100

SECTION 4. - - - - - - - - - - FIRST-AID MEASURES- - - - - - - - - - -

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

4.2 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. - - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - - - -

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture
Carbon oxides

Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Further information
No data available

SECTION 6. - - - - - - - - ACCIDENTAL RELEASE MEASURES- - - - - - - - -

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections
For disposal see section 13.

SECTION 7. - - - - - - - - - - HANDLING AND STORAGE- - - - - - - - - - -

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hygroscopic.
Storage class (TRGS 510): 10: Combustible liquids

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -

Control parameters

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Ethylene glycol	107-21-1	(c)	100 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		TWA	10 mg/m3	Canada. British Columbia OEL
		STEL	20 mg/m3	Canada. British Columbia OEL
		C	100 mg/m3	Canada. British Columbia OEL
		C	50 ppm	Canada. British Columbia OEL
		C	50 ppm 127 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	A substance which may not be recirculated in accordance with section 108			
		TWA	25 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	10 mg/m3	USA. ACGIH Threshold Limit Values (TLV)

Predicted No Effect Concentration (PNEC)

Compartment	Value
Soil	1.53 mg/kg
Marine water	1 mg/l
Fresh water	10 mg/l

Marine sediment	3.7 mg/kg
Fresh water sediment	37 mg/kg
Sewage treatment plant	199.5 mg/l
Aquatic intermittent release	10 mg/l

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber

Minimum layer thickness: 0.11 mm Break
through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material:
Nitrile rubber

Minimum layer thickness: 0.11 mm Break
through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)
data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

SECTION 9. - - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - - -

Information on basic physical and chemical properties

a) Appearance Form: liquid

		Colour: colourless
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -13 °C (9 °F)
f)	Initial boiling point and boiling range	196 - 198 °C 385 - 388 °F
g)	Flash point	111 °C (232 °F) - closed cup115 °C (239 °F) - open cup
h)	Evaporation rate	1
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 15.3 %(V) Lower explosion limit: 3.2 %(V)
k)	Vapour pressure	1 hPa at 51.1 °C (124.0 °F)
l)	Vapour density	2.14 - (Air = 1.0)
m)	Relative density	1.113 g/mL at 25 °C (77 °F)
n)	Water solubility	completely miscible
o)	Partition coefficient: log Pow: -1.36 - Bioaccumulation is not expected. n-octanol/water	
p)	Auto-ignition temperature	412 °C (774 °F) at 1,013 hPa
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

Other safety information

Surface tension	48.4 mN/m at 20 °C (68 °F)
Relative vapour density	2.14 - (Air = 1.0)

SECTION 10. - - - - - - - - -STABILITY AND REACTIVITY - - - - - - - - -

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Conditions to avoid
No data available

Incompatible materials

Strong acids, Strong oxidizing agents, Strong bases, Aldehydes, Aluminum

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides In the event of fire: see section 5

SECTION 11. - - - - - - - - - TOXICOLOGICAL INFORMATION - - - - - - - -

Acute toxicity

(Regulation (EC) No 1272/2008, Annex VI)

LC50 Inhalation - Rat - male and female - 6 h - > 2.5 mg/l Remarks: (ECHA)

LD50 Dermal - Mouse - male and female - > 3,500 mg/kg Remarks: (ECHA)

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 20 h
Remarks: (ECHA)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation - 24 h
Remarks: (ECHA)

Respiratory or skin sensitisation

Maximisation Test - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity

Ames test

Escherichia coli/Salmonella typhimurium Result: negative

Rat - male and female Result: negative

Carcinogenicity

This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

Laboratory experiments have shown teratogenic effects.
Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

No data available

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.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption: agitation, CNS disorders Systemic effects:
After a latency period:
Tiredness, ataxia (impaired locomotor coordination), Unconsciousness Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice. Central nervous system - Irregularities - Based on Human Evidence

SECTION 12. - - - - - - - - - ECOLOGICAL INFORMATION - - - - - - - - - -

Toxicity

Toxicity to fish	static test LC50 - Pimephales promelas (fathead minnow) - > 72,860 mg/l - 96 h (US-EPA)	
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)	
Toxicity to algae	IC5 - Scenedesmus quadricauda (Green algae) - > 10,000 mg/l Remarks: (Lit.)	- 7d
Toxicity to bacteria	static test EC20 - activated sludge - > 1,995 mg/l - 30 min (ISO 8192)	

Persistence and degradability

Biodegradability	aerobic - Exposure time 10 d Result: 90 - 100 % - Readily biodegradable. (OECD Test Guideline 301A)
Biochemical Oxygen Demand (BOD)	780 mg/g Remarks: (IUCLID)
Chemical Oxygen Demand (COD)	1,190 mg/g Remarks: (IUCLID)
Theoretical oxygen demand	1,290 mg/g Remarks: (IUCLID)
Ratio BOD/ThBOD	60 % Remarks: (IUCLID)

Bioaccumulative potential
Does not bioaccumulate.

Mobility in soil
No data available

Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

Additional ecological information: No data available

SECTION 13. - - - - - - - - - DISPOSAL CONSIDERATIONS - - - - - - - - -

Product

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14. - - - - - - - - - - TRANSPORT INFORMATION - - - - - - - - -

DOT (US)

UN number: 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

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15. - - - - - - - - - REGULATORY INFORMATION - - - - - - - - - -

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

SECTION 16. - - - - - - - - - - OTHER INFORMATION- - - - - - - - - - - -

Further information: no limited for paper copy, just for internal uses.

For research use only. Not intended for human or animal diagnostic or therapeutic uses.

Disclaimer

The information provided on this MSDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

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End of SDS