Safety Data Sheet

Ethylene Glycol-$(OD)_2$

Section 1. Chemical product and company identifications

Product code: D-0110
Chemical formula: $C_2H_4D_2O_2$
CAS: 2219-52-5
CAS (unlabelled): 107-21-1
Synonyms: 1,2-Dihydroxyethane, 1,2-Ethanediol

Supplier / Manufacturer:

C/D/N Isotopes Inc.
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Pointe-Claire (Québec) H9R 1H1
Phone: 514-697-6254
Toll-Free (Canada & USA): 1-800-565-4696
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Website: www.cdnisotopes.com

In case of emergency:

TOXYSCAN HOTLINE: 1-855-780-0599

Section 2. Hazards identifications

Physical state: Liquid
Warning: Harmful if swallowed.
Routes of entry: Inhalation, ingestion, skin and eyes

GHS (Globally Harmonized System of Classification and Labelling of Chemicals):

GHS Classification:
- Acute toxicity, Oral (Category 4)
- Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney

GHS Label elements:
- Pictograms:
- Signal word: Warning

Hazards statement:
- H302 Harmful if swallowed.
- H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary statement:
- P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

Section 3. Composition and information on ingredients

Name	CAS	Concentration %
Ethylene Glycol-$(OD)_2$	2219-52-5	> 98

Section 4. First aid measures

Eye contact: Flush eyes with water as a precaution.
Skin contact: Wash off with soap and plenty of water. Consult a physician.
Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

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Section 5. Firefighting measures

Flammability of the product: Not flammable or combustible.
Lower explosion limit: 3.2 Vol%.
Upper explosion limit: 15.3 Vol%
Auto-ignition temperature: 400 °C (752 °F)
Flash point: 111 °C (232 °F)
Products of combustion: Hazardous decomposition products formed under fire conditions: Carbon oxides.
Firefighting media and instructions: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Section 6. Accidental release measures

Personal precautions: Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
Environmental precautions: Do not let product enter drains.
Methods for cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Section 7. Handling and storage

Handling: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Provide appropriate exhaust ventilation.
Storage: Store at room temperature. Adequate ventilation. Protect from moisture.

Section 8. Exposure Controls, Personal Protections

Engineering controls: Use mechanical exhaust or laboratory fumehood to avoid exposure.
Eyes: Safety glasses with side-shields conforming to NIOSH (US) or EN 166 (EU).
Respiratory: 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).
Hands: Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Skin/body: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Section 9. Physical and chemical properties (unlabelled)

Molecular weight: 62.07 g/mol
Physical status: Liquid
Color: Colorless
Odour: Odorless
Density: 1.113 g/mL
Melting point: -13 °C (9 °F)
Boiling point: 196 - 198 °C (385 - 388 °F)
Vapour pressure: 0.13 hPa (0.10 mmHg) at 20 °C (68 °F)
Vapour density: 2.14 (Air = 1)
Partition coefficient (octanol/water): log Pow: -1.36
Water solubility: Completely miscible

Section 10. Stability and reactivity

Stability and reactivity: Stable under recommended storage conditions.
Incompatibility: Strong acids, strong oxidizing agents, strong bases, aldehydes, aluminum.
Products of combustion: Hazardous decomposition products formed under fire conditions: Carbon oxides.
Reactivity conditions: No data available.

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Section 11. Toxicological information (unlabelled)

Toxicological data: Ethylene glycol

Information on ingredients:

Name	CAS	LD_{50}	LC_{50}
Ethylene glycol	107-21-1	Oral - Rat - 4,700 mg/kg Intraperitoneal - Mouse - 5,614 mg/kg	No data available

Potential acute effects

- **Eyes:** May cause eye irritation.
- **Skin:** May be harmful if absorbed through skin. May cause skin irritation.
- **Inhalation:** May be harmful if inhaled. May cause respiratory tract irritation.
- **Ingestion:** Harmful if swallowed.

Potential chronic effects

- **Carcinogenic effects:** 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.
- **Mutagenic effects:** No data available.
- **Teratogenic effects:** Laboratory experiments have shown teratogenic effects.
- **Medical conditions aggravated by overexposure:** Oral - May cause damage to organs through prolonged or repeated exposure. - Kidney.

Section 12. Ecological information

Ecological data:

Name	Results	Species	Period
Ethylene glycol	18,500 mg/l LC50	Oncorhynchus mykiss	96 h
	> 10,000 mg/l LC50	Leuciscus idus	48 h
	74,000 mg/l EC50	Daphnia magna	24 h
	41,000 mg/l LC50	Daphnia magna	48 h

Effects on environment: No data available.
Mobility: No data available.
Environmental precautions: No data available.
Persistence and degradability: No data available.
Bioaccumulative potential: Does not bioaccumulate.

Section 13. Disposal considerations

Waste disposal: Contact a licensed professional waste disposal service to dispose of this material.

Section 14. Transportation information

Classification DOT/IMDG/IATA label:

Shipping name: Not dangerous goods
UN number: None
Class: None
Packaging group: None

Additional information: None

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Section 15. Regulatory information

UNITED STATES:
NFPA classification

Health: 1
Flammable: 1
Reactivity: 0
Special conditions: None

Legend: 4: Severe, 3: High, 2: Moderate, 1: Slightly, 0: Not hazardous

U.S. Federal regulations:

TSCA 8(b) inventory: Ethylene glycol
SARA 302/304/311/312 extremely hazardous substances: Not Listed
SARA 302/304 emergency planning and notification: Not Listed
SARA 302/304/311/312 hazardous chemicals: Not Listed
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard: Not Listed
CWA (Clean Water Act) 307: Not Listed
CWA (Clean Water Act) 311: Not Listed
CAA (Clean Air Act) 112 accidental release prevention: Not Listed
CAA (Clean Air Act) 112 regulated flammable substances: Not Listed
CAA (Clean Air Act) 112 regulated toxic substances: Not Listed

State regulations:

DEA List I Chemicals (Precursor Chemicals): Not Listed
DEA List II Chemicals (Essential Chemicals): Not Listed
Substances in Massachusetts: Listed
Dangerous substances in New Jersey: Listed
New York – Dangerous substances with acute effects: Not Listed
Dangerous substances in Pennsylvania – right to know: Listed

WHMIS (Canada):

D2A - Very toxic material causing other toxic effects
D2B - Toxic material causing other toxic effects

Section 16. Additional information

References:

- ANSI Z400.1, MSDS Standard, 2001.
- Manufacturer's Material Safety Data Sheet.
- 29CFR Part1910.1200 OSHA MSDS Requirements.
- 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. -Canada
- Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
- Federal act on the controlled products
- Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2002.
- Toxicological repertory, HSC.
- Material safety data sheet from the components.

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Elaborated by: **Toxyscan Inc., 1-866-780-0599**
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