# SAFETY DATA SHEET



Ethylene Glycol 25%

### **Section 1. Identification**

**Product identifier** : Ethylene Glycol 25% Other means of : ethane-1,2-diol

identification

**Product type** : Liquid. **Product part number** : R8365

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

**Product use** : Coolants/ Refrigerant. Area of application : Industrial applications.

**Manufacturer** : MOLECULAR DEVICES, LLC

> 3860 N First Street San Jose, CA 95134

USA

e-mail address of person responsible for this SDS

: msdsinquiry@moldev.com

**Emergency telephone** number (with hours of : CHEMTREC (24 hours): 1-800-424-9300 (USA/Canada),

+1 703-527-3887 (Outside USA/Canada)

operation)

### Section 2. Hazard identification

Classification of the : H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED

EXPOSURE) - Category 2 substance or mixture

**GHS** label elements

**Hazard pictograms** 



Signal word : Warning

**Hazard statements** : H373 - May cause damage to organs through prolonged or repeated exposure.

(kidneys)

**Precautionary statements** 

**Prevention** : P260 - Do not breathe vapor.

: P314 - Get medical advice or attention if you feel unwell. Response

**Storage** : Not applicable.

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional,

national and international regulations.

Other hazards which do not : None known.

result in classification

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# Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification

: ethane-1,2-diol

Ingredient name	Other names	% (w/w)	Identifiers
Water	-	75	CAS: 7732-18-5
ethanediol	-	25	CAS: 107-21-1
sodium carbonate	-	0.01	CAS: 497-19-8

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First-aid measures

### **Description of necessary first aid measures**

Eye contact : Immediately

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10

minutes. Get medical attention following exposure or if feeling unwell.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight

clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and

shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly

before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been

swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical

attention immediately. Maintain an open airway. Loosen tight clothing such as a

collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

### Potential acute health effects

Eye contact
 Inhalation
 No known significant effects or critical hazards.
 Skin contact
 Ingestion
 No known significant effects or critical hazards.
 No known significant effects or critical hazards.
 No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

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### Section 4. First-aid measures

Skin contact: No specific data.Ingestion: No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** 

: No specific treatment.

**Protection of first-aiders** 

: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### See toxicological information (Section 11)

### Section 5. Fire-fighting measures

#### **Extinguishing media**

Suitable extinguishing

media

: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing** 

media

: Do not use water jet.

Specific hazards arising from the chemical

: In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products

: Decomposition products may include the following materials: carbon dioxide

carbon monoxide

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode

### Section 6. Accidental release measures

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

For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders:

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** 

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

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### Section 6. Accidental release measures

#### **Small spill**

: Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

#### Large spill

: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Contain and collect spillage with noncombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

# Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** 

: Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

including any incompatibilities

Conditions for safe storage, : Store at room temperature. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

### Section 8. Exposure controls/personal protection

#### **Control parameters**

**Occupational exposure limits** 

Ingredient name	Exposure limits
ethanediol	CA Saskatchewan Provincial (Canada, 4/2021)  CEIL: 100 mg/m³. Form: aerosol.  CA British Columbia Provincial (Canada, 3/2025) Notes: No British Columbia exposure limit at this time for inhalable aerosol  TWA 8 hours: 10 mg/m³. Form: total, Aerosol.  STEL 15 minutes: 20 mg/m³. Form: total, Aerosol.  C: 100 mg/m³. Form: total, Aerosol.  C: 50 ppm. Form: vapour.  CA Ontario Provincial (Canada, 6/2019)  Ceiling Limit: 10 mg/m³. Form: inhalable particulate matter, aerosol only.  STEL 15 minutes: 50 ppm. Form: vapour fraction.

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### Section 8. Exposure controls/personal protection

TWA 8 hours: 25 ppm. Form: vapour fraction.

CA Quebec Provincial (Canada, 2/2024)
C: 50 ppm. Form: vapour and mist.
C: 127 mg/m³. Form: vapour and mist.
CA Alberta Provincial (Canada, 3/2023)

### **Biological exposure indices**

None known.

# Appropriate engineering controls

: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

C: 100 ma/m<sup>3</sup>.

# Environmental exposure controls

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

### **Individual protection measures**

#### **Hygiene measures**

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### **Eye/face protection**

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

# Skin protection Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

#### **Body protection**

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

#### **Respiratory protection**

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

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### Section 9. Physical and chemical properties

: 102°C (215.6°F)

: Not available.

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

**Appearance** 

**Physical state** : Liquid.

Color : Not available. : Not available. Odor **Odor threshold**  Not available. Melting point and freezing : -12°C (10.4°F)

**Boiling point or initial** boiling point and boiling

**Evaporation rate** : Not available. : Not available. **Flammability** 

Lower and upper explosion limit or lower and upper

flammability limit

Flash point : Closed cup: Not applicable.

**Auto-ignition temperature** 

°C °F Ingredient name Method 398 748.4 ethanediol

**Decomposition temperature** : Not available. pН : Not available.

**Viscosity** : Dynamic (room temperature): Not available.

Media

water

Kinematic (room temperature): Not available. Kinematic (40°C (104°F)): Not available.

Result

Easily soluble

Partition coefficient - n-

value)

**Solubility** 

: Not applicable.

octanol/water (logarithmic

Vapor pressure

	Vapoi	r Pressui	re at 20°C	Vapor pressure at 50°0		
Ingredient name	mm Hg	kPa	Method	mm Hg	kPa	Method
Water	17.5	2.3		92.258	12.3	

**Density** : 1.03 g/cm<sup>3</sup> **Relative density** : Not available. **Relative vapor density** : Not available.

**Particle characteristics** 

**Median particle size** : Not applicable.

Other information

Physical/chemical properties comments No additional information.

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### Section 10. Stability and reactivity

**Reactivity**: No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**: The product is stable.

Possibility of hazardous

reactions

: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not

occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

**Hazardous decomposition** 

products

: Under normal conditions of storage and use, hazardous decomposition products

should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

**Acute toxicity** 

Product/ingredient name Result

ethanediol Rat - Oral - LD50

4700 mg/kg

Rabbit - Dermal - LD50

9.5 g/kg

Rat - Dermal - LD50 10600 mg/kg

sodium carbonate Rat - Oral - LD50

4090 mg/kg

Rabbit - Dermal - LD50 EPA

>2000 mg/kg

**Conclusion/Summary [Product]**: Not available.

Skin corrosion/irritation

Product/ingredient name Result

sodium carbonate Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24

hours

Amount/concentration applied: 500 mg

**Conclusion/Summary [Product]** : Not available.

Serious eye damage/eye irritation

Product/ingredient name Result

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### **Section 11. Toxicological information**

sodium carbonate Rabbit - Eyes - Mild irritant

**Duration of treatment/exposure: 0.5** 

minutes

Amount/concentration applied: 100 mg **Rabbit - Eyes - Moderate irritant**<u>Duration of treatment/exposure</u>: 24

hours

Amount/concentration applied: 100 mg

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 50 mg

**Conclusion/Summary [Product]** : Not available.

**Respiratory corrosion/irritation** 

**Conclusion/Summary [Product]** : Not available.

Respiratory or skin sensitization

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

**Conclusion/Summary [Product]** : Not available.

**Germ cell mutagenicity** 

**Conclusion/Summary [Product]** : Not available.

**Carcinogenicity** 

**Conclusion/Summary [Product]** : Not available.

#### Classification

Product/ingredient name	IARC	NTP	ACGIH
ethanediol	-	-	A4

### **Reproductive toxicity**

**Conclusion/Summary [Product]**: Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name Result

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### Section 11. Toxicological information

ethanediol

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (oral) - Category 2

### **Aspiration hazard**

Not available.

#### Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards. Inhalation : No known significant effects or critical hazards. **Skin contact** : No known significant effects or critical hazards. : No known significant effects or critical hazards. Ingestion

#### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data. Inhalation : No specific data. Skin contact : No specific data. Ingestion : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

**Short term exposure** 

Potential immediate

effects

: Not available.

**Potential delayed effects** 

Long term exposure

: Not available.

Potential immediate

: Not available.

effects

Potential delayed effects : Not available.

#### Potential chronic health effects

**Conclusion/Summary [Product]** : Not available.

**General** : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : No known significant effects or critical hazards. Mutagenicity : No known significant effects or critical hazards. **Reproductive toxicity** : No known significant effects or critical hazards.

### **Numerical measures of toxicity**

**Acute toxicity estimates** 

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### **Section 11. Toxicological information**

Pro	oduct/ingredient name	Oral (mg/ kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Eth	ylene Glycol 25%	2000.2	N/A	N/A		N/A
eth	anediol	500	9500	N/A	N/A	N/A
soc	dium carbonate	4090	2500	N/A	N/A	N/A

### Section 12. Ecological information

**Toxicity** 

Product/ingredient name Resul

ethanediol Acute - LC50 - Fresh water Effect: Mortality

Fish - Fathead minnow - Pimephales

*promelas* <u>Age</u>: ≤7 days

8050 mg/l [96 hours]

Acute - LC50 - Fresh water <u>Effect</u>: Mortality

Crustaceans - Water flea - Ceriodaphnia dubia - Neonate

6900 mg/l [48 hours]

sodium carbonate Acute - LC50 - Fresh water Effect: Mortality

Fish - Bluegill - Lepomis macrochirus

Size: 3.88 cm; Weight: 0.96 g

300 mg/l [96 hours]

Acute - LC50 - Fresh water <u>Effect</u>: Mortality

Crustaceans - Scud Order - Amphipoda

176 mg/l [48 hours]

**Conclusion/Summary [Product]**: Not available.

Persistence and degradability

Product/ingredient name Result

ethanediol 90 to 100% [10 days] - Readily OECD [Ready Biodegradability - DOC

Die-Away Test]

**Conclusion/Summary [Product]**: Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ethanediol	-	-	Readily

### **Bioaccumulative potential**

Product/ingredient name	LogPow	BCF	Potential
Water ethanediol	-1.38 -1.36	-	Low Low

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### Section 12. Ecological information

Mobility in soil

Soil/Water partition coefficient

: Not available.

#### Other adverse effects

No known significant effects or critical hazards.

### Section 13. Disposal considerations

### **Disposal methods**

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## **Section 14. Transport information**

	TDG Classification	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

#### **Additional information**

**DOT Classification** 

: Reportable quantity 20000 lbs / 9080 kg [2328.8 gal / 8815.5 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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### Section 15. Regulatory information

#### **Canadian lists**

Canadian NPRI : The following components are listed: ethylene glycol

CEPA Toxic substances : None of the components are listed.Canada inventory : All components are listed or exempted.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

**Montreal Protocol** 

Not listed.

**Stockholm Convention on Persistent Organic Pollutants** 

Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)** 

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals** 

Not listed.

### Section 16. Other information

**History** 

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revision

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Prepared by : Sphera Solutions

**Key to abbreviations** : ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

HPR = Hazardous Products Regulations IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships,

1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

N/A = Not available UN = United Nations

### Procedure used to derive the classification

Classification	Justification
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

**References** : HPR = Hazardous Products Regulations

▼ Indicates information that has changed from previously issued version.

**Notice to reader** 

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## Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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