

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation:2020-11-03

SECTION 1: Identification

1.1 Product identifier

Identification of the substance

Ethanediol

Synonymous: Ethylene glycol

Monoethylene glycol

Ethane-1,2-diol

Glycol

Ethylene alcohol

1,2-Dihydroxyethane

MEG

CAS number

107-21-1

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

Relevant identified uses

Industrial use

1.3 Details of the supplier of the safety data sheet

Anhui Eapearlchemical CO., LTD

518 Cuihu 1st Road, Tongling

City, Anhui Province, P.R.China

Telephone: 0562-5858458

Fax:0562-5858448

Website: www.epchems.com

e-mail (competent person)

sales06@epchems.com

1.4 Emergency telephone number

Emergency information service

+86 18256201888

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.10	acute toxicity (oral)	4	Acute Tox. 4	H302
3.9	specific target organ toxicity - repeated exposure	2	STOT RE 2	H373

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure.

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

Additional information

According to the results of its assessment, this substance is not a PBT or a vPvB.

2.2 Label elements

Labeling

- Signal word warning

- Pictograms

GHS07, GHS08



- Hazard statements

H302 Harmful if swallowed.

H373 May cause damage to organs through prolonged or repeated exposure.

- Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P314 Get medical advice/attention if you feel unwell.

P330 Rinse mouth.

P501 Dispose of contents/container to industrial combustion plant.

2.3 Other hazards

Special danger of slipping by leaking/spilling product.

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	MONOETHYLENE GLYCOL
Identifiers	
CAS No	107-21-1
Molecular formula	C ₂ H ₆ O ₂
Molar mass	62.07 g/mol

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

Advices on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: Sawdust, Kieselgur (diatomite), Sand, Universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal precautions: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation
Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)								
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Source
MX	ethylene glycol	107-21-1	VLE				100	NOM-010-STPS

Notation

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified
TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

Human health values

Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	35 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	106 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

Environment values

Relevant PNECs and other threshold levels				
Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
PNEC	10 mg/l	aquatic organisms	freshwater	short-term (single instance)
PNEC	1 mg/l	aquatic organisms	marine water	short-term (single instance)
PNEC	10 mg/l	aquatic organisms	water	intermittent release
PNEC	199.5 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	37 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	3.7 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
PNEC	1.53 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Color	Clear, Transparent
Odor	Practically Odorless

Other safety parameters

pH (value)	not determined
Melting point/freezing point	-13 °C
Initial boiling point and boiling range	197.4 °C at 1,013 hPa
Flash point	111 °C at 1,013 hPa
Evaporation rate	not determined
Flammability (solid, gas)	not relevant (fluid)

Explosive limits

- Lower explosion limit (LEL)	3.2 vol%
- Upper explosion limit (UEL)	15.3 vol%
Vapor pressure	0.123 hPa at 25 °C
Density	1.11 g/cm ³ at 20 °C
Vapor density	this information is not available

Solubility(ies)

- Water solubility	1,000 g/l at 20 °C , Hygroscopic Liquid.
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Partition coefficient

- n-octanol/water (log KOW)	-1.36 (ECHA)
- Soil organic carbon/water (log KOC)	0 (ECHA)
Auto-ignition temperature	398 °C (ECHA)

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

Viscosity

- Dynamic viscosity	16.1 mPa s at 25 °C
Explosive properties	none
Oxidizing properties	none

9.2 Other information

Temperature class (USA, acc. to NEC 500)	T2 (maximum permissible surface temperature on the equipment: 300°C)
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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Oxidizers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Harmful if swallowed.

- Acute toxicity estimate (ATE)

Oral 500 mg/kg

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Biodegradation

The substance is readily biodegradable. The relevant substances of the mixture are readily biodegradable.

12.2 Persistence and degradability

Process of degradability		
Process	Degradation rate	Time
DOC removal	90 – 100 %	10 d

12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	-1.36 (ECHA)
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12.4 Mobility in soil

Data are not available.

Henry's law constant	0.133 Pa m ³ /mol at 25 °C
The Organic Carbon normalised adsorption coefficient	0 (ECHA)

12.5 Results of PBT and vPvB assessment

Data are not available.

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

- | | | |
|------|--------------------------------------------------------------------|-----------------------------------------------------------------------|
| 14.1 | UN number | not subject to transport regulations |
| 14.2 | UN proper shipping name | not relevant |
| 14.3 | Transport hazard class(es) | |
| | Class | - |
| 14.4 | Packing group | not relevant |
| 14.5 | Environmental hazards | non-environmentally hazardous acc. to the dangerous goods regulations |
| 14.6 | Special precautions for user | |
| | There is no additional information. | |
| 14.7 | Transport in bulk according to Annex II of MARPOL and the IBC Code | |
| | The cargo is not intended to be carried in bulk. | |

Information for each of the UN Model Regulations

Transport information - National regulations - Additional information (UN RTDG)

Limited quantities (LQ) (UN RTDG)

International Maritime Dangerous Goods Code (IMDG)

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)

Not subject to ICAO-IATA.

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

There is no additional information.

National regulations (United States)

Toxic Substance Control Act (TSCA) substance is listed

SARA TITLE III (Superfund Amendment and Reauthorization Act)

- List of Extremely Hazardous Substances (40 CFR 355) (EPCRA Section 302 and 304)
not listed
- Specific Toxic Chemical Listings (40 CFR 372) (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings			
Name acc. to inventory	CAS No	Remarks	Effective date
ethylene glycol	107-21-1		1986-12-31

New Jersey Worker and Community Right to Know Act N.J.S.A. 34:5A-1 et. seq.

Right to Know Hazardous Substance List			
Name acc. to inventory	CAS No	Remarks	Classifications
ethylene glycol	107-21-1		

California Environmental Protection Agency (Cal/EPA): Proposition 65 Chemicals known to the State to cause cancer or reproductive toxicity

not listed

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information, including date of preparation or last revision

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NOM-010-STPS	NORMA Oficial Chinese NOM-010-STPS: Agentes químicos contaminantes del ambiente laboral-Reconocimiento, evaluación y control
PBT	Persistent, Bioaccumulative and Toxic

MONOETHYLENE GLYCOL

Version number: GHS 1.0

Date of compilation: 2020-11-03

Abbr.	Descriptions of used abbreviations
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
STEL	Short-term exposure limit
TWA	Time-weighted average
VLE	Permissible exposure limit
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Norma Oficial Chinese NOM-018-STPS-2015, Sistema armonizado para la identificación y comunicación de peligros y riesgos por sustancias químicas peligrosas en los centros de trabajo y NMX-R-019-SFCI-2011 Sistema Armonizado de Clasificación y Comunicación de Peligros de los Productos Químicos.

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H302	Harmful if swallowed.
H373	May cause damage to organs through prolonged or repeated exposure.

Disclaimer

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