# Safety Data Sheet
## acc. to OSHA HCS

*Printing date 05/03/2018* *Reviewed on 02/10/2009*

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## 1 Identification

· **Product identifier**

· **Trade name: Ethylene glycol**

· **Article number:** 11285
· **CAS Number:**
107-21-1
· **EC number:**
203-473-3
· **Index number:**
603-027-00-1
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de

· **Information department:** Product Safety department Tel.: +49 6221 13840-35
· **Emergency telephone number:**
Medical Emergency Information in case of poisoning:
Poison Information Center Mainz - Phone: +49 (0) 6131 19240
(advisory service in German or English language)

## 2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

· **Label elements**
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS07
· **Signal word** Warning
· **Hazard statements**
Harmful if swallowed.
· **Precautionary statements**
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**


Health = 0
Fire = 1
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**


*Health = 1*
*Fire = 1*
*Reactivity = 0*

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** *PBT - assessment not available.*
· **vPvB:** *vPvB - assessment not available.*

## 3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
*107-21-1 Ethanediol*
· **Identification number(s)**
· **EC number:** *203-473-3*
· **Index number:** *603-027-00-1*
· **Description:**
· **Empirical formula:** $C_2H_6O_2$
· **MW:** *62.1*

## 4 First-aid measures

· **Description of first aid measures**
· **General information:**
*Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*
· **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*
· **After skin contact:** *Immediately wash with water and soap and rinse thoroughly.*
· **After eye contact:**
*Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist In case of complaints.*
· **After swallowing:**
*Rinse out mouth and then drink plenty of water.*
*If symptoms persist consult doctor.*
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*
· **Indication of any immediate medical attention and special treatment needed**
*No further relevant information available.*

## 5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
$CO_2$, *extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
· **Special hazards arising from the substance or mixture**
*In case of fire, the following can be released:*
*Carbon monoxide and carbon dioxide*
· **Advice for firefighters**
· **Protective equipment:** *Wear self-contained respiratory protective device.*



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## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
Avoid contact with the eyes and skin.
· **Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

## 7 Handling and storage

· **Handling:**
· **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store at dry places in tightly closed receptacles.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
This product is hygroscopic.
Store in dry conditions.
Store receptacle in a well ventilated area.
· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **107-21-1 Ethanediol (80-100%)** | |
| TLV | Short-term value: C 100 mg/m³<br>H |

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Store protective clothing separately.
Immediately remove all soiled and contaminated clothing.
Avoid contact with the eyes and skin.
Wash hands before breaks and at the end of work.
· **Breathing equipment:**
Short term filter device:
Filter A/P2

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· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
Chloroprene rubber, CR
· **Eye protection:** Tightly sealed goggles
· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

| | |
|---|---|
| · **Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Appearance:** | |
| **Form:** | Liquid |
| **Color:** | Colorless |
| · **Odor:** | Weak, characteristic |
| · **pH-value (100 g/l) at 20 °C (68 °F):** | 6.0 - 7.5 |
| · **Change in condition** | |
| **Melting point/Melting range:** | - 16 °C |
| **Boiling point/Boiling range:** | 197 °C (387 °F) |
| · **Flash point:** | 111 °C (232 °F) |
| · **Ignition temperature:** | 410 °C (770 °F) |
| · **Decomposition temperature:** | > 200 - 250 °C |
| · **Danger of explosion:** | Product does not present an explosion hazard. |
| · **Explosion limits:** | |
| **Lower:** | 3.2 Vol % |
| **Upper:** | 43 Vol % |
| · **Vapor pressure at 20 °C (68 °F):** | 0.053 hPa |
| · **Density at 20 °C (68 °F):** | 1.11 g/cm³ (9.263 lbs/gal) |
| · **Solubility in / Miscibility with** | |
| **Water at 20 °C (68 °F):** | 1000 g/l |
| · **Other information** | No further relevant information available. |

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## 10 Stability and reactivity

· **Reactivity** No further relevant informations available
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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· **Possibility of hazardous reactions**
Forms explosive mixtures with air on intense heating.
Explosion hazard with aluminium ( formation of $H_2$), perchloric acid
Exothermic reaction with chlorosulfonic acid, sodium hydroxide, oleum, sulfuric acid
Ignition hazard / formation of flammable gases with chromyl chloride, strong oxidising agents, chlorates, peroxides, potassium permanganate
· **Conditions to avoid** high ttemperatures
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:**
following decomposition products may be formed, but not limited to:
Formaldehyde
Methane
Carbon monoxide and carbon dioxide
Hydrogen

## 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

| · **LD/LC50 values that are relevant for classification:** | | |
|---|---|---|
| Oral | LD50 | 4700 mg/kg (rat) |
| Dermal | LD50 | 10620 mg/kg (rbt) |
| | LC50/96h | > 18500 mg/l (Forelle) |

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Other information (about experimental toxicology):**
experience concerning human exposure to 1,2-ethanediol:
experience concerning humans:
adverse effects on the state of conciousness
the substance may cause adverse effects on kidneys through repeated oral exposure or through repeated dermal exposure to large amounts.
adverse effects on the central nervous system
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

· **Carcinogenic categories**
· **IARC (International Agency for Research on Cancer)** Substance is not listed.
· **NTP (National Toxicology Program)** Substance is not listed.
· **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

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## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Other information:**
The product is easily biodegradable.
83 - 96 % in 14 d
· **Behavior in environmental systems:**
· **Bioaccumulative potential** The bioaccumulative potential is considered to be low.
· **Mobility in soil** No further relevant information available.

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· **Ecotoxical effects:**
· **Remark:** EC50 / 24 h (Daphnia magna): 74000 mg / l
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Assessment by list): slightly hazardous for water
Do not allow product to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Disposal must be made according to official regulations.

· **Uncleaned packagings:**
· **Recommendation:**
Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT, ADR, ADN, IMDG, IATA** | Void |
| · **UN proper shipping name** | |
| · **DOT, ADR, ADN, IMDG, IATA** | Void |
| · **Transport hazard class(es)** | |
| · **DOT, ADN** | |
| · **Class** | Void |
| · **ADR, IMDG, IATA** | |
| · **Class** | Void |
| · **Label** | - |
| · **Packing group** | |
| · **DOT, ADR, IMDG, IATA** | Void |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **Transport/Additional information:** | Not dangerous according to the above specifications. |
| · **UN "Model Regulation":** | Void |

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Section 355 (extremely hazardous substances):** Substance is not listed.

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· **Section 313 (Specific toxic chemical listings):** Substance is listed.
· **TSCA (Toxic Substances Control Act):** Substance is listed.
· **Proposition 65** Substance is not listed.
· **Chemicals known to cause cancer:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
· **Chemicals known to cause developmental toxicity:** Substance is not listed.

· **Cancerogenity categories**
· **EPA (Environmental Protection Agency)** Substance is not listed.
· **TLV (Threshold Limit Value established by ACGIH)** A4
· **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS07
· **Signal word** Warning
· **Hazard statements**
Harmful if swallowed.
· **Precautionary statements**
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Product safety department
· **Contact:** +49 6221 13840-35
· **Date of preparation / last revision** 05/03/2018 / 3
· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
PBT: persistent, bioaccumulative, toxic substance (REACH)
vPvB: very persistent, very bioaccumulative substance (REACH)
REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Regulation on classification, labelling and packaging of substances and mixtures
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
· ***** Data compared to the previous version altered.**