

**SAFETY DATA SHEET**

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 06/17/2018

Version 1.4

**SECTION 1. Identification****Product identifier**

Product number	EX0566
Product name	Ethylene Glycol Anhydrous
CAS-No.	107-21-1

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

Identified uses	Reagent for analysis
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**Details of the supplier of the safety data sheet**

Company	Millipore (Canada) Ltd   109 Woodbine Downs Blvd. Unit 5   Etobicoke   Ontario M9W 6Y1   Canada   General Inquiries: +1 800-645-5476   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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**SECTION 2. Hazards identification****GHS Classification**

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

**GHS-Labeling***Hazard pictograms**Signal Word*

Warning

*Hazard Statements*

H302 Harmful if swallowed.  
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

*Precautionary Statements*

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

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P264 Wash skin thoroughly after handling.

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

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P314 Get medical advice/ attention if you feel unwell.

P330 Rinse mouth.

P501 Dispose of contents/ container to an approved waste disposal plant.

## Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Formula

HOCH<sub>2</sub>CH<sub>2</sub>OH

C<sub>2</sub>H<sub>6</sub>O<sub>2</sub> (Hill)

Molar mass

62.07 g/mol

## Hazardous ingredients

*Chemical name (Concentration)*

CAS-No.

*ethylene glycol (>= 90 % - <= 100 % )*

107-21-1

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## SECTION 4. First aid measures

### Description of first-aid measures

#### *Inhalation*

After inhalation: fresh air. Call in physician.

#### *Skin contact*

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

#### *Eye contact*

After eye contact: rinse out with plenty of water.

#### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

Never give anything by mouth to an unconscious person.

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

agitation, Nausea, Vomiting, Tiredness, ataxia (impaired locomotor coordination), CNS disorders, Unconsciousness

### Indication of any immediate medical attention and special treatment needed

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

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## SECTION 5. Fire-fighting measures

### Extinguishing media

#### *Suitable extinguishing media*

Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

#### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapors possible in the event of fire.

### Advice for firefighters

#### *Special protective equipment for fire-fighters*

In the event of fire, wear self-contained breathing apparatus.

#### *Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact.

Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

### Conditions for safe storage, including any incompatibilities

Tightly closed.

Store at room temperature.

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**SECTION 8. Exposure controls/personal protection****Exposure limit(s)***Ingredients*

Basis	Value	Threshold limits	Remarks
<i>ethylene glycol 107-21-1</i>			
CAD AB OEL	Ceiling Limit Value:	100 mg/m <sup>3</sup>	
CAD BC OEL	Ceiling Limit Value:	50 ppm	Form of exposure: Vapores.
	Ceiling Limit Value:	100 mg/m <sup>3</sup>	Form of exposure: Aerosol.
	Time Weighted Average (TWA):	10 mg/m <sup>3</sup>	Form of exposure: Particulate.
CAD MB OEL	Short Term Exposure Limit (STEL):	20 mg/m <sup>3</sup>	Form of exposure: Particulate.
	Ceiling Limit Value:	100 mg/m <sup>3</sup>	Form of exposure: Aerosol.
CAD ON OEL	Ceiling Limit Value (CEV):	100 mg/m <sup>3</sup>	Form of exposure: Aerosol.
OEL (QUE)	Ceiling Limit Value:	50 ppm	Form of exposure: Vapor and mist.
		127 mg/m <sup>3</sup>	
			Recirculation prohibited
			Form of exposure: Vapor and mist.

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

*Hygiene measures*

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

*Eye/face protection*

Safety glasses

*Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Other protective equipment:*  
protective clothing

### *Respiratory protection*

required when vapors/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapors of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	Not applicable
pH	6 - 7.5 at 100 g/l 68 °F (20 °C)
Melting point/range	7 - 14 °F (-14 - -10 °C)
Boiling point/boiling range	387.7 °F (197.6 °C) at 1,013 hPa
Flash point	232 °F (111 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	3.2 %(V)
Upper explosion limit	15.3 %(V)

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Vapor pressure	0.053 hPa at 68 °F (20 °C)
Relative vapor density	2.14
Density	1.11 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	1,000 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: -1.36 (experimental) (Lit.) Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	> 392 - 482 °F (> 200 - 250 °C) Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	21 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	770 °F (410 °C) Method: DIN 51794
Conductivity	< 1 µS/cm

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## SECTION 10. Stability and reactivity

### Reactivity

Forms explosive mixtures with air on intense heating.  
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Risk of explosion with:

Aluminum, perchloric acid

Risk of ignition or formation of inflammable gases or vapors with:

chromyl chloride, Strong oxidizing agents, chlorates, Peroxides, potassium permanganate

Exothermic reaction with:

chlorosulfonic acid, Sodium hydroxide, fuming sulfuric acid, sulfuric acid

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## Conditions to avoid

Strong heating.

## Incompatible materials

various plastics

## Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Eye contact, Skin contact

#### *Acute oral toxicity*

LDLO human: 786 mg/kg (RTECS)

Symptoms: Nausea, Vomiting

#### *Acute inhalation toxicity*

LC50 Rat: > 2.5 mg/l; 6 h ; aerosol  
(ECHA)

#### *Acute dermal toxicity*

LD50 Mouse: > 3,500 mg/kg  
(ECHA)

#### *Skin irritation*

Rabbit

Result: No irritation  
(ECHA)

#### *Eye irritation*

Rabbit

Result: No eye irritation  
(ECHA)

#### *Sensitization*

Patch test:

Result: negative

(IUCLID)

#### *Genotoxicity in vivo*

Chromosome aberration test

Rat

Result: negative  
(ECHA)

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### *Genotoxicity in vitro*

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

(ECHA)

### *Carcinogenicity*

Did not show carcinogenic effects in animal experiments.

### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

### *Specific target organ systemic toxicity - repeated exposure*

May cause damage to organs through prolonged or repeated exposure if swallowed.

Routes of exposure: Oral

Target Organs: Kidney

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **Carcinogenicity**

IARC

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

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

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

## **Further information**

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.

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## **SECTION 12. Ecological information**

### **Ecotoxicity**

*Toxicity to fish*

LC50 Oncorhynchus mykiss (rainbow trout): > 18,500 mg/l; 96 h (External MSDS)

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### *Toxicity to daphnia and other aquatic invertebrates*

static test *Daphnia magna* (Water flea): > 100 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202

### *Toxicity to algae*

IC50 *Scenedesmus quadricauda* (Green algae): > 10,000 mg/l; 7 d (Lit.)

### *Toxicity to bacteria*

static test EC50 *Pseudomonas putida*: > 10,000 mg/l; 16 h

DIN 38412

## **Persistence and degradability**

### *Biodegradability*

100 %; 10 d; aerobic

OECD Test Guideline 301A

Readily biodegradable.

### *Biochemical Oxygen Demand (BOD)*

780 mg/g (5 d)

(IUCLID)

### *Chemical Oxygen Demand (COD)*

1,190 mg/g

(IUCLID)

### *Theoretical oxygen demand (ThOD)*

1,290 mg/g

(IUCLID)

### *Ratio BOD/ThBOD*

BOD5 60 %

(IUCLID)

## **Bioaccumulative potential**

### *Partition coefficient: n-octanol/water*

log Pow: -1.36

(experimental)

(Lit.) Bioaccumulation is not expected.

## **Mobility in soil**

No information available.

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## **SECTION 13. Disposal considerations**

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## **SECTION 14. Transport information**

### **Land transport (DOT)**

Not classified as dangerous in the meaning of transport regulations.

### **Air transport (IATA)**

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Not classified as dangerous in the meaning of transport regulations.

## Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

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## SECTION 15. Regulatory information

### United States of America

#### Canada

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.

#### Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Labeling

#### Hazard pictograms



#### Signal Word

Warning

#### Hazard Statements

H302 Harmful if swallowed.

H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

#### Precautionary Statements

Response

P314 Get medical advice/ attention if you feel unwell.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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