

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 1.5

SECTION 1. Identification**Product identifier**

Product number	GX0185
Product name	Glycerol GR ACS
CAS-No.	56-81-5

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-Labeling**

Not a dangerous substance according to GHS.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature	Alcohol
Formula	(HOCH ₂) ₂ CHOH C ₃ H ₈ O ₃ (Hill)
Molar mass	92.1 g/mol

Remarks	WHMIS hazardous composition: No ingredients are hazardous according to the CPR criteria.
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SECTION 4. First aid measures**Description of first-aid measures**

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Inhalation

After inhalation: fresh air.

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. Remove contact lenses.

Ingestion

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Cyanosis, gastric pain, Drowsiness, Diarrhea, Vomiting, Headache

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Water, Carbon dioxide (CO₂), Foam, 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.

Fire may cause evolution of:

Acrolein

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

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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. Chemisorb®). Dispose of properly. Clean up affected area.

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.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>glycerine 56-81-5</i>			
CAD AB OEL	Time Weighted Average (TWA):	10 mg/m ³	Form of exposure: Mist.
CAD BC OEL	Time Weighted Average (TWA):	10 mg/m ³	Form of exposure: Mist.
	Time Weighted Average (TWA):	3 mg/m ³	Form of exposure: Respirable mist.
CAD ON OEL	Time Weighted Average (TWAEV):	10 mg/m ³	Form of exposure: Mist.
OEL (QUE)	Time Weighted Average (TWA):	10 mg/m ³	Form of exposure: 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. 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

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splash contact:

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

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).

Other protective equipment:

protective clothing

Respiratory protection

required when vapors/aerosols are generated.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	Not applicable
pH	ca. 5 at 100 g/l 68 °F (20 °C)
Melting point/range	64 - 68 °F (18 - 20 °C)
Boiling point/boiling range	554 °F (290 °C) at 1,013 hPa (decomposition)
Boiling point/boiling range	360 °F (182 °C) at 15 hPa
Flash point	ca. 356 °F (180 °C) Method: open cup
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.

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Lower explosion limit	2.6 %(V)
Upper explosion limit	11.3 %(V)
Vapor pressure	< 0.001 hPa at 68 °F (20 °C)
Relative vapor density	3.18
Density	1.26 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	log Pow: -1.8 (25 °C) (experimental) Bioaccumulation is not expected. (Lit.)
Autoignition temperature	No information available.
Decomposition temperature	> 554 °F (> 290 °C)
Viscosity, dynamic	1,412 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	752 °F (400 °C)

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:

halogens, Strong oxidizing agents, peroxi compounds, hydrogen peroxide, Nitriles

perchloric acid, with, Lead oxides

Nitric acid, with, sulfuric acid

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

potassium permanganate, hydrides, calcium hypochlorite

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Fluorine, with, Lead oxides

Exothermic reaction with:

Oxides of phosphorus, chromium(VI) oxide, phosphorus halides

Acetic anhydride, with, phosphorous oxichloride

ANILINE, with, Nitrobenzene

Conditions to avoid

Strong heating (decomposition).

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Acute oral toxicity

LD50 Rat: 12,600 mg/kg (IUCLID)

Symptoms: Vomiting, gastric pain, Diarrhea

Acute inhalation toxicity

Symptoms: Possible damages:, slight mucosal irritations

Acute dermal toxicity

LD50 Rabbit: > 18,700 mg/kg
(IUCLID)

Skin irritation

Rabbit

Result: No irritation

(IUCLID)

Eye irritation

Rabbit

Result: No eye irritation

OECD Test Guideline 405

Sensitization

Patch test: human

Result: negative

(IUCLID)

Genotoxicity in vitro

Ames test

Result: negative

(IUCLID)

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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

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

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 swallowing of large amounts:

Cyanosis, Headache, Drowsiness

However, when the product is handled appropriately, hazardous effects are unlikely to occur.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

static test LC50 *Oncorhynchus mykiss* (rainbow trout): 54,000 mg/l; 96 h (ECHA)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 *Daphnia magna* (Water flea): > 10,000 mg/l; 24 h (ECHA)

Persistence and degradability

Biodegradability

63 %; 14 d

OECD Test Guideline 301C

Readily biodegradable.

Biochemical Oxygen Demand (BOD)

870 mg/g (5 d)

(External MSDS)

Chemical Oxygen Demand (COD)

1,160 mg/g

(External MSDS)

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Theoretical oxygen demand (ThOD)

1,217 mg/g

(Lit.)

Ratio BOD/ThBOD

BOD5 71 %

(Lit.)

Ratio COD/ThBOD

95 %

(Lit.)

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -1.8 (25 °C)

(experimental)

Bioaccumulation is not expected. (Lit.)

Mobility in soil

No information available.

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.

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

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.

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.

Revision Date 06/17/2018

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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