

# MATERIAL SAFETY DATA SHEET

## Chemical Product

Product Name: Glycerine AR  
CAS#: 56-81-5  
Synonym: 1,2,3-Propanetriol; Glycerol  
Chemical Name: Glycerine  
Chemical Formula: C<sub>3</sub>H<sub>5</sub>(OH)<sub>3</sub>

## Composition and Information on Ingredients

Name	S.K.U	% by Weight
GLYCERINE	GCS-6281	100

## Hazards Identification

### Potential Acute Health Effects:

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation.

### Potential Chronic Health Effects:

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.

## First Aid Measures

### Eye Contact:

Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

### Skin Contact:

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention.  
Wash contaminated clothing before reusing.

### Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Inhalation:**

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation: Not Available.

**Ingestion:**

Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

**Serious Ingestion:**

**Fire and Explosion Data**

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature:

370°C (698°F)(NFPA Fire Protection Guide to Hazardous Materials, 13th ed., 2002; NIOSH ICSC, 2001; CHRIS, 2001) 392 C (739 F) (Lewis, 1997)

Flash Points: LOWER: 0.9%

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO<sub>2</sub>), irritating and toxic fumes.

**Fire Hazards in Presence of Various Substances:**

Slightly flammable to flammable in presence of open flames and sparks, of heat, of oxidizing materials. Non- flammable in presence of shocks.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available. Explosive in presence of oxidizing materials.

**Fire Fighting Media and Instructions:**

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

**Special Remarks on Explosion Hazards:**

Glycerin is incompatible with strong oxidizers such as chromium trioxide, potassium chlorate, or potassium permanganate and may explode on contact with these compounds. Explosive glyceryl nitrate is formed from a mixture of glycerin and nitric and sulfuric acids. Perchloric acid, lead oxide + glycerin form perchloric esters which may be explosive. Glycerin and chlorine may explode if heated and confined.

## Accidental Release Measures

### Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

### Large Spill:

Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Do not get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed.

Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Handling and Storage

### Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

### Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic.

## Exposure Controls/Personal Protection

### Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

### Personal Protection:

Safety glasses. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### Exposure Limits:

TWA: 10 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] [1999] Inhalation Total. TWA: 15 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] Inhalation Total. TWA: 10 STEL: 20 (mg/m<sup>3</sup>) [Canada] TWA: 5 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] Inhalation Reproducible. Consult local authorities for acceptable exposure limits.

## Physical and Chemical Properties

Physical state and appearance: Liquid. (Viscous (Syrupy) liquid.)

Odor : Mild

Taste : Sweet.

Molecular Weight : 92.09 g/mole

Color : Clear Colorless.

pH (1% soln/water) : Not available.

Boiling Point : 290°C (554°F)

Melting Point : 19°C (66.2°F)

Critical Temperature : Not available.

Specific Gravity : 1.2636 (Water = 1)

Vapor Pressure : 0 kPa (@ 20°C)

Vapor Density : 3.17 (Air = 1)

Volatility : Not available.

Odor Threshold : Not available.

Water/Oil Dist. Coeff. : The product is more soluble in water; log (oil/water) = -1.8

Ionicity (in Water) : Not available.

Dispersion Properties : See solubility in water, acetone.

Solubility : Miscible in cold water, hot water and alcohol.

Partially soluble in acetone. Very slightly soluble in diethyl ether (ethyl ether). Limited solubility in ethyl acetate. Insoluble in carbon tetrachloride, benzene, chloroform, petroleum ethers, and oils.

## Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

### Conditions of Instability:

Avoid contact with incompatible materials, excess heat and ignition, sources,

moisture. Incompatibility with various substances: Highly reactive with oxidizing

agents. Corrosivity: Non-corrosive in presence of glass.

### Special Remarks on Reactivity:

Hygroscopic. Glycerin is incompatible with strong oxidizers such as chromium trioxide, potassium chlorate, or potassium permanganate. Glycerin may react violently with acetic anhydride, aniline and nitrobenzene, chromic oxide, lead oxide and fluorine, phosphorous triiodide, ethylene oxide and heat, silver perchlorate, sodium peroxide, sodium hydride.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

## Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact.

### Toxicity to Animals:

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR

EXPOSURE. Acute oral toxicity (LD50): 4090 mg/kg [Mouse]. Acute dermal toxicity (LD50): 10000 mg/kg [Rabbit]. Acute toxicity of the mist (LC50): >570 mg/m<sup>3</sup> 1 hours [Rat].

Chronic Effects on Humans: May cause damage to the following organs: kidneys.

### Other Toxic Effects on Humans:

Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

### Special Remarks on Toxicity to Animals:

TDL (rat) - Route: Oral; Dose: 100 mg/kg 1 day prior to mating. TDL (human) - Route: Oral; Dose: 1428 mg/kg

### Special Remarks on Chronic Effects on Humans:

Glycerin is transferred across the placenta in small amounts. May cause adverse reproductive effects based on animal data (Paternal Effects (Rat): Spermatogenesis (including genetic material, sperm morphology, motility, and count), Testes, epididymis, sperm duct). May affect genetic material.

### Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Low hazard for normal industrial handling or normal workplace conditions. Skin: May cause skin irritation. May be absorbed through skin  
Eyes: May cause eye irritation with stinging, redness, burning sensation, and tearing, but no eye injury. Ingestion: Low hazard. Low toxicity except with very large doses. When large doses are ingested, it can cause gastrointestinal tract irritation with thirst (dehydration), nausea or vomiting diarrhea. It may also affect behavior/central nervous system/nervous system (central nervous system depression, general anesthetic, headache, dizziness, confusion, insomnia, toxic psychosis, muscle weakness, paralysis convulsions), urinary system/kidneys(renal failure, hemoglobinuria), cardiovascular system (cardiac arrhythmias), liver. It may also cause elevated blood sugar. Inhalation: Due to low vapor pressure, inhalation of the vapors at room temperature is unlikely. Inhalation of mist may cause respiratory tract irritation. Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion may affect the blood (hemolysis, changes in white blood cell count), endocrine system (changes in adrenal weight), respiratory system, and may cause kidney injury.

Toxicological Data on Ingredients: Glycerin: ORAL (LD50): Acute: 12600 mg/kg [Rat]. 4090 mg/kg [Mouse]. DERMAL (LD50): Acute: 10000 mg/kg [Rabbit]. MIST(LC50): Acute: >570 mg/m<sup>3</sup> 1 hours [Rat].

## Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 58.5 ppm 96 hours [Trout].

BOD5 and COD: Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:**

The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

**Disposal Considerations****Waste Disposal:**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

**Transformation Information**

Land transport (ADR-RID)

General information: Not regulated.

Sea transport (IMDG) [English only]

General information: Not regulated.

Air transport (ICAO-IATA) [English only]

General information: Not regulated.

**Other Regulatory Information****Federal and State Regulations:**

Illinois toxic substances disclosure to employee act: Glycerin Rhode Island RTK hazardous substances: Glycerin Pennsylvania RTK: Glycerin Minnesota: Glycerin Massachusetts RTK: Glycerin Tennessee - Hazardous Right to Know: Glycerin TSCA 8(b) inventory: Glycerin

**Other Regulations:**

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

**Other Classifications:**

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC): Not available S24/25- Avoid contact with skin and eyes.

**HMIS (U.S.A.):**

Health Hazard: 2

**Fire Hazard: 1**

Reactivity: 0

**Personal Protection: E**

National Fire Protection Association (U.S.A.):

**Health: 2**

Flammability: 1

**Reactivity: 0**

Specific hazard:

**Protective Equipment:**

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**Additional Information**



References: Not available.

Other Special Considerations: Not available.

## ***Disclaimer:***

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