MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment

See Section 8.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product code:	G1012
Product Name:	GLYCERIN, REAGENT, ACS
Chemical Name:	Glycerol
Synonyms:	1,2,3-Propanetriol 1,2,3-Trihydroxypropane Glycerin mist Glycerin, anhydrous Glycerin, synthetic Glycerine Glyceritol Glycyl alcohol Grocolene Osmoglyn Synthetic glycerin Trihydroxypropane glicerina (Spanish) glycérine (French)
Recommended use:	Solvent. Cosmetics. Lubricant. Soaps. In foods.
CAS #:	56-81-5
RTECS #	MA8050000
Formula:	C3-H8-O3
CI#:	Not available
Supplier:	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000
Order Online At:	**https://www.spectrumchemical.com**
Emergency Telephone Number:	CHEMTREC: 1-800-424-9300
Contact Person:	Regina Wachenheim (East Coast)
Contact Person:	Martin LaBenz (West Coast)

2. HAZARDS IDENTIFICATION

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

May cause skin and eye irritation
May cause irritation of respiratory tract

Odor:	Physical state:	Appearance:	Color:
Mild.	Liquid.	Viscous. Syrupy.	Clear. Colorless.

OSHA Regulatory Status This material is not considered hazardous by the OSHA Hazard Communication Standard (29 1910.1200)

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:
Skin. Ingestion. Eyes.

Acute Potential Health Effects:

Skin Contact:
May cause skin irritation. Mild skin irritation. It may be absorbed through the skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Eye Contact:
Contact with eyes may cause irritation. Mild eye irritation. Symptoms may include stinging, tearing, redness.

Inhalation:
May cause irritation of respiratory tract.

Ingestion:
Expected to be a low hazard for usual industrial handling. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhoea. May cause central nervous system effects. May affect the liver. It may affect the kidneys. May affect the blood.

Chronic Potential Health Effects:

Component	Carcinogen Status:
Glycerin 56-81-5 (100)	No information available

Target Organs: No information available

Mutagenic Effects: May affect genetic material
Experiments with human lymphocytes have shown mutagenic effects

Teratogenic Effects: No information available

Aggravated Medical Conditions: No information available

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Glycerin	56-81-5	100

4. FIRST AID MEASURES

General Advice: Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Notes to Physician: Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F):	177°C/350.6 °F 160 °C/320 °F

Flash Point Tested according to:
Open cup
Closed cup

Lower Explosion Limit (%):	No information available
Upper Explosion Limit (%):	No information available

Autoignition Temperature (°C/°F):	370-392 °C/698-739 °F

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Hazardous Combustion Products: Carbon monoxide; Carbon dioxide

Specific hazards: May be combustible at high temperatures
May be ignited by heat, sparks or flames
Container explosion may occur under fire conditions or when heated

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific Methods: No information available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

Environmental Precautions:
No information available.

Methods for Cleaning Up:
Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors or spray mist. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Storage

Technical Measures/Storage Conditions:
Hygroscopic. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:
Oxidizing agents. Acids. Acid anhydrides. Aniline. Nitrobenzene.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure: Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Personal Protective Equipment

Eye protection: Goggles. Safety glasses with side-shields.

Skin and body protection: Long sleeved clothing. Chemical resistant apron. Gloves.

Respiratory protection: Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent. .

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

National occupational exposure limits

United States

U.S Occupational Exposure Limits:

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Glycerin - 56-81-5	15 mg/m^3 TWA	None	None	None

Canada

Canada Occupational Exposure Limits:

Components	Alberta	British Columbia	Ontario	Quebec
Glycerin 56-81-5	10 mg/m^3 TWA	10 mg/m^3 TWA 3 mg/m^3 TWA respirable	10 mg/m^3 TWA mist	10 mg/m^3 TWAEV mist

Australia and Mexico

Occupational Exposure Limits for Australia and Mexico:

Components	Australia	Mexico
Glycerin 56-81-5	10 mg/m^3 TWA	10 mg/m^3 TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Liquid.

Appearance:
Viscous. Syrupy.

Color:
Clear. Colorless.

Odor:
Mild.

Molecular/Formula weight:
92.09

Taste
Sweet.

Flash point (°C):
160

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Autoignition Temperature (°C/°F):
370-392 °C/698-739 °F

Melting point/range(°C/°F):
19-20 °C/66.2-68 °F

Boiling point/range(°C/°F):
290 °C/554 °F

pH:
No information available

Specific gravity:
1.2613-1.2636 @ 20 °C

Density (g/cm3):
No information available

Decomposition temperature(°C/°F):
No information available

Bulk density:
No information available

Vapor pressure @ 20°C (kPa):
0

Evaporation rate:
No information available

Vapor density:
3.17

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
-1.76

Miscibility:
No information available

Solubility:
Freely soluble in water
Insoluble in Benzene
Insoluble in Chloroform
Insoluble in Carbon disulfide
Insoluble in Carbon tetrachloride
Insoluble in Petroleum ether

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions

Conditions to avoid: Heat. Ignition sources. Exposure to moist air. Exposure to moisture.

Incompatible Materials: Oxidizing agents. Acids. Acid anhydrides. Aniline. Nitrobenzene.

Hazardous decomposition products: Carbon monoxide. Carbon dioxide.

Possibility of Hazardous Reactions: It can react vigorously, violently or explosively with oxidizers
Glycerin is incompatible with strong oxidizers such as chromium trioxide, potassium chlorate, or potassium permanganate and may explode on contact
Explosive glyceryl nitrate is formed from a mixture of glycerin and nitric and sulfuric acids
When Perchloric acid and Lead oxide are mixed with glycerin, perchloric esters are formed, which may be explosive
Glycerin and chlorine may explode if heated and confined
Glycerin may react violently with acetic anhydride, aniline, nitrobenzene, chromic oxide, lead oxide, fluorine, phosphorous triiodide, ethylene oxide, silver perchlorate, sodium peroxide, and sodium hydride

Polymerization: Hazardous polymerisation does not occur

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Glycerin - 56-81-5

LD50/oral/rat = 12600 mg/kg Oral LD50 Rat
LD50/oral/mouse = 4090 mg/kg
LD50/dermal/rat = > 21900 mg/kg Dermal LD50 Rat
LD50/dermal/rabbit = 10 g/kg Dermal LD50Rabbit
LC50/inhalation/rat = 570 mg/m^3 Inhalation LC50 Rat 1 h
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = 27 gm/kg LD50 oral Rabbit

Product Information

LC50/inhalation/rat > 570 mg/m^3 Inhalation 1 h
LC50/Inhalation/mouse No information available
LD50/dermal/rabbit > 10000mg/kg
LD50/dermal/rat > 21900 mg/kgmg/kg
LD50/oral/mouse = 4090 mg/kgmg/kg
LD50/oral/rat = 12600 mg/kgmg/kg

Local Effects

Skin irritation: May cause skin irritation. Mild skin irritation.

Eye irritation: Contact with eyes may cause irritation. Mild eye irritation. Symptoms may include stinging, tearing, redness.

Inhalation: May cause irritation of respiratory tract. This material has a very low vapor pressure. Not expected to be an inhalation hazard for normal handling. If the product is misted or heated, the Inhalation of mist or vapor can cause respiratory tract irritation.

Ingestion: Low hazard. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause dehydration. May cause thirst. May cause hyperglycemia. May affect liver . It may affect behavior/central nervous system (excitement, depression, general anesthetic, headache, dizziness, convulsions, confusion, insomnia, muscle weakness). It may affect behavior/central nervous system (drowsiness). May affect blood (changes in serum composition).

Sensitization: No information available

Chronic Toxicity

Chronic Toxicity Prolonged or repeated ingestion may affect the blood (changes in white blood cell count). Prolonged or repeated ingestion may affect the blood (changes in serum composition). Chronic ingestion of Glycerin may increase blood serum glyceride concentration . Prolonged or repeated ingestion may affect the kidneys. Prolonged or repeated ingestion may affect the liver.

Carcinogenic effects: Not considered carcinogenic

Components	NTP	IARC	OSHA HCS - Carcinogens	ACGIH - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Glycerin	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects: May affect genetic material
Experiments with human lymphocytes have shown mutagenic effects

Reproductive Effects: The Registry of Toxic Effects of Chemical Substances (RTECS) notes reproductive effects data for animal studies on male rats and monkeys (paternal effects: spermatogenesis (including sperm morphology, motility, and count), testes, epididymis, sperm duct). However, the route of exposure was intratesticular (injection into the testicles), which is not a route of exposure for normal handling. The REPROTOX data base notes that when given orally to male rats, glycerin had no effect on fertility. The Teratogen Information System also notes that no teratogenic effect was observed among offspring of mice, rats, or rabbits given large oral doses of glycerin during pregnancy. Increased rates of embryonic and fetal death were only seen when pregnant rabbits were give glycerin intravenously, which is not a route of exposure for normal handling

Teratogenic Effects: No information available

Target Organs: No information available

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals: Information given is based on data on the components and the ecotoxicology of similar products

Ecotoxicity effects: Aquatic environment.

Aquatic toxicity:

Glycerin - 56-81-5

Freshwater Fish Species Data: 51 - 57 mL/L LC50 Oncorhynchus mykiss 96 h static 1
Water Flea Data: 500 mg/L EC50 Daphnia magna 24 h

Mobility: No information available

Persistence and degradability: No information available

Bioaccumulative potential: No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Glycerin	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: None
Subsidiary Risk: Not applicable
Marine Pollutant No data available
ERG No: No information available
DOT RQ (lbs): No information available

TDG (Canada)

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

ADR

UN-No: No information available
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: Not Regulated
Proper Shipping Name: No information available

Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available
IMDG Page: No information available
Marine Pollutant No information available
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: No information available
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available

ICAO

UN-No: No information available
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Glycerin	Present	Present	Present KE-29297	Present (2)-242	Present	Present	Present 200-289-5

U.S. Regulations

Glycerin

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: Present
Pennsylvania RTK: Present
RI RTK - Hazardous Substances List: Present
Minnesota - Hazardous Substance List: Present
FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 182.90 21 CFR 182.1320

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Glycerin	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting *de minimis*
Glycerin	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Glycerin	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
Non-controlled

Glycerin

Uncontrolled product according to WHMIS classification criteria

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	Canada (DSL)	Canada (NDSL)
Glycerin	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Glycerin	Not listed	Not listed

EU Classification

R-phrase(s)
not determined

S -phrase(s)
none

Components	Classification	Concentration Limits:	Safety Phrases
Glycerin		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Not dangerous

16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1/Z129.1-2010 standards.

Preparation Date: 22-Jan-2014

Reason for revision: Not applicable

Prepared by: Sonia Owen

Literature reference: No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.