KIC Chemicals, Inc.
87 South Ohioville Road
New Paltz, NY 12561 USA
Phone: 845-883-5306 Fax: 845-883-5326
http://www.kicgroup.com

GLYCERIN 99.7% SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product Identifier:

Substance Name: Glycerin
Trade Name: Refined Glycerin 99.7% min purity
Synonyms: 1,2,3-Propanetriol, Glycerol, Glycerine
Chemical Formula: $C_3H_8O_3$
Product Type: Substance
CAS Number: 56-81-5
EC Number: 200-289-5
Other Means of Identification: n/a

Recommended uses & restrictions on use:

Intended Use: Industrial use, professional use
Identified Uses: Raw material for manufacturing oleochemical derivatives; used in synthesis and as a solvent
Uses advised against: None identified

Supplier name:
KIC Chemicals, Inc.
87 South Ohioville Road
New Paltz, NY 12561 USA
Phone: 845-883-5306 Fax: 845-883-5326
http://www.kicgroup.com
E-mail address of person responsible for this SDS: QC@kicgroup.com

Emergency Telephone #: 800-424-9300 CHEMTREC

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification of Substance in accordance to Regulation (EC) No. 1272/2008 (CLP/GHS):
Not a hazardous substance or mixture.
OSHA Hazard Communication Standard
This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

GHS Label Elements: None

Other Hazards
Potential Health Effects:
Can be irritating to the eyes.
Can be harmful if ingested.
Can be harmful if inhaled. Avoid breathing mist.
Can be irritating to the skin.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance: Glycerin
Chemical identity: $C_3H_8O_3$

Common name/Synonyms: 1,2,3-Propanetriol, Glycerol, Glycerine

Ingredient name	CAS number	EC number	%	EU Classification	GHS Classification
Glycerin	56-81-5	200-289-5	99.7% min	Not Classified	Not Classified

Impurities and Stabilizing Additives

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General Advice: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Take care to self-protect by avoiding becoming contaminated.

Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms/Injuries after inhalation: ON HEATING: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
Symptoms/Injuries after skin contact: n/a
Symptoms/Injuries after eye contact: Redness of the eye tissue. Lacrimation.
Symptoms/Injuries after ingestion: Nausea. Vomiting. Diarrhea.
AFTER ABSORPTION OF HIGH QUANTITIES: Headache. Dehydration. Disturbances of heart rate. Change in the aerogramme/blood composition. Decreased renal function.

Description of First Aid Measures

First-aid measures after inhalation: Remove the victim into fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.
First-aid measures after skin contact: Wash immediately with lots of water (15 minutes)/shower. Soap may be used. Remove clothing before washing.
First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion: DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual. Ingestion of large quantities: immediately to hospital.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand. All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable extinguishing media: Use dry powder, foam, carbon dioxide or water for extinguishing. For larger fires use water spray or alcohol resistant foam.
Unsuitable extinguishing media: No data available

Special Hazards Arising from the Substance or Mixture

Fire hazard: DIRECT FIRE HAZARD. Combustible, keep away from open flame, no smoking.
INDIRECT FIRE HAZARD. Temperature above flashpoint: higher fire/explosion hazard.
Explosion hazard: No direct explosion hazard.
Reactivity: Decomposes on exposure to temperature rise: release of toxic/corrosive/combustible gases/vapors (acrolein). Upon combustion CO and CO2 are formed. May polymerize on exposure to temperature rise. Reacts

violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) acids: (increased) risk of fire/explosion.

Advice for Firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire.

Protection during firefighting: Firefighters should wear full protective gear. Use self-contained breathing equipment if in confined place. Do not enter fire area without proper protective equipment, including respiratory protection.

Other Information: Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Mark the danger area. Exposure to heat: have neighborhood close doors and windows. Exposure to fire/heat: consider evacuation. Wash contaminated clothes. Use gloves, face shield

For Non-emergency Personnel

Protective equipment: Use appropriate personal protection equipment (PPE).

Emergency procedures: Evacuate unnecessary personnel.

For Emergency Responders

Protective equipment: Equip cleanup crew with proper protection. Use appropriate personal protection equipment (PPE).

Emergency procedures: Ventilate area.

Environmental Precautions

Do not allow to flow into drainage system.

Methods and Material for Containment and Cleanup

For containment: Collect leakage in sealable containers, soak up with sand or other inert absorbent and remove to safe place. Flush away remainder with water.

Methods for cleaning up: Clear up spills immediately and dispose of waste safely.

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Prevention of user exposure: Put on appropriate personal protective equipment. Use gloves and wear goggles when handling. Avoid breathing mist.

Prevention of fire and explosion: Handling temperature ≥ 10 °C above melting point

Precautions while moving the product: Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.

Hygiene Measures: Workers should wash hands and face before eating, drinking and smoking.

Conditions for Safe Storage, Including any Incompatibilities

Storage precautions: Keep in a cool and dry place. Keep separate from oxidants. Avoid extreme heat and cold. Avoid direct fire. Store in clean, dry, and preferably stainless steel or HDPE vessels.
In bulk, store at ambient temperature.
Temperature higher than necessary degrades quality at rate dependent on time and temperature of exposure.
Exposure to ultraviolet light, especially sunlight, must be minimized to prevent quality loss.

Incompatible products: KEEP SUBSTANCE AWAY FROM: heat sources, oxidizing agents, (strong) acids, (strong) bases.

Packaging materials: Packaging should be closable, dry, clean, correctly labelled, and meet the legal requirements. Secure fragile packaging in solid containers. Suitable storage includes steel, aluminum, iron, synthetic material, glass.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Occupational Exposure Controls: n/a
Technical measures: n/a
Occupational Exposure Limits:

Glycerine Components:

Source	Type	Value	Note
US (OSHA)	TWA	15 mg/m3	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants
US (ACGIH)	TWA	10 mg/m3	ACGIH Threshold Limit Value

Appropriate Engineering Controls

Recommended monitoring procedures:
Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Individual Protection Measures

Personal Protective Equipment: Gloves. Safety glasses. Protective clothing.
Mist formation: aerosol mask with filter type P1. On heating: gas mask with filter type A.

Materials for Protective Clothing: GIVE GOOD RESISTANCE: natural rubber, neoprene, PVC, Viton.
GIVE LESS RESISTANCE: styrene-butadiene rubber. GIVE POOR RESISTANCE: polyurethane.
Eye Protection: Use protective goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU). Maintain eye wash fountain and quick-drench facilities in work area.
Hand Protection: suitable protective gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Skin and Body Protection: suitable protective clothing.
Respiratory Protection: Mist formation: aerosol mask with filter type P1. On heating: gas mask with filter type A.
Environmental Exposure Controls: If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.
Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

General Information

Physical State: Clear, colorless, hygroscopic viscous liquid.
Color: colorless
Odor: odorless
Molecular Weight: 92.09 g/mol

Safety Data

pH: Neutral
Initial boiling point and boiling range: 290 - 295 °C @ 760mm Hg
Flash point: >199 °C
Evaporation rate: n/a
Flammability (solid, gas): n/a
Upper/lower flammability or explosive limits: n/a

Vapor pressure: < 0.001 hPa @ 20°C
Vapor pressure: 0.0033 hPa @ 50°C
Vapor density: 3.2 (relative, air=1)
Relative density: 1.0 @ 20 °C at saturated mixture vapor/air (air=1)
Solubility(ies): Infinite g/100 ml in water @ 20 °C
Partition coefficient: n-octanol/water: -2.6
Auto-ignition temperature: 429 °C
Decomposition temperature: 290 °C
Viscosity: 1400 mPas (20 °C)
Log Pow: -1.76/2.6
Melting point/freezing point: 18 °C
Boiling Point: 290 °C

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Vapor mixes readily with air. Decomposes on exposure to temperature rise: release of toxic, corrosive, combustible gases/ vapors (acrolein). Upon combustion CO and CO2 are formed. May polymerize on exposure to temperature rise. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) acids: (increased) risk of fire/explosion.
Chemical stability: Hygroscopic. Able to polymerize above 149 °C. Decomposes when heated above 290 °C.
Possibility of Hazardous Reactions: None known
Conditions to Avoid: None known
Incompatible materials: Reacts violently with strong oxidants
Hazardous Decomposition Products: Low toxicity in original state and not considered hazardous to human beings. On heating/burning: release of toxic/combustible gases/vapors (acrolein).

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity by oral route, inhalation and dermal route: Not Classified

Product	Test	Species	Dose
Glycerin	LD50, Oral	Rat	12,600 mg/kg
	LC50, Inhalation	Rat	>570mg/m3/1Hr
	LD50, Dermal	Rabbit	> 10,000 mg/kg

Skin irritation/corrosion: Can be irritating to the skin.
Eye irritation: Can be irritating to the eyes.
Skin sensitization: Can be harmful if absorbed through skin.
Respiratory irritation: Can be harmful if inhaled. Can be irritating to the respiratory tract. Avoid exposure to mist.

CMR Effects

Mutagenicity: Not mutagenic (Ames test)
Carcinogenicity: n/a
Reproductive toxicity: n/a
Developmental toxicity: n/a
Repeated dose toxicity - Oral route: n/a
Toxicokinetics: n/a
Chronic/Other Effects: n/a

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity (aquatic and terrestrial, where available)

Ecology - General: No supplementary information available.
Ecology - Air: TA-Luft Klasse 5.2.5.
Ecology - Water:
Mild water pollutant (surface water)
Not harmful to fishes (LC_{50} (96h) >1,000 mg/l)
Not harmful to aquatic organisms (EC_{50} >1,000 mg/l)

Not harmful to algae
Not harmful to bacteria
Bioaccumulation: not applicable
Sludge digestion is inhibited at >1,000 mg/l 50%
Readily biodegradable in water (OECD 301D: 82%; 20 days)

Organism/Biotic Test	Toxicity
LC_{50} fishes 1	54,000 mg/l (96 h, SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS)
LC_{50} other aquatic organisms 1	> 1,000 mg/l (96 h)
LC_{50} other aquatic organisms 1	> 1,000 mg/l (BACTERIA, ACTIVATED SLUDGE)
LC_{50} fish 2	> 1,000 mg/l (96 h, PISCES)
EC_{50} Daphnia 2	> 10,000 mg/l (24 h, DAPHNIA MAGNA, LOCOMOTOR EFFECT)
TLM fish 1	> 1,000 ppm (96 h, PISCES)
TLM other aquatic organisms 1	> 1,000 ppm (96 h)
Threshold limit other aquatic organisms 1	2,900 mg/l (192 h, MICROCYSTIS AERUGINOSA, TOXICITY TEST)
Threshold limit other aquatic organisms 2	> 10,000 mg/l (16 h, PSEUDOMONAS PUTIDA, TOXICITY TEST)
Threshold limit algae 1	> 10,000 mg/l (168 h, SCENEDESMUS QUADRICAUDA, TOXICITY TEST)

Persistence and Degradability: Readily biodegradable, OECD 301
Biochemical oxygen demand (BOD): 0.87 g O2/g substance
Chemical oxygen demand (COD): 1.16 g O2/g substance (ISO 15705)
ThOD: 1.217 g O2/g substance
BOD: (% of ThOD) 71 % ThOD
Bioaccumulative Potential: Log P octanol /water = -1.76/2.6

Mobility in the Soil
Surface tension 0,063 N/m (20°C)
Ecology - biodegradability in soil: no data available.

Other Adverse Effects: None available.

SECTION 13: DISPOSAL CONSIDERATIONS

Methods of Disposal of Waste Residue: Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite, or powdered limestone. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Wash down leftovers with plenty of water. Wash clothing and equipment after handling. Do not discharge into surface water.
Disposal of Contaminated Packaging: Waste incineration with the approval of the responsible local authority.

SECTION 14: TRANSPORT INFORMATION

UN number: not regulated as a hazardous material.
UN proper shipping name: n/a
Transport hazard class(es): Not hazardous according to RID/ADR, GGVS/GGVE, ADNR, IMDG, ICAO-TI/IATA-DGR.
Packing group: n/a
Environmental hazards (e.g.: Marine pollutant (Yes/No)): No
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): n/a
Special precautions: n/a

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulations
No REACH Annex XVII restrictions
EU Regulation 10/2011 (Annex I): FCM 103 - (CAS 0000056-81-5) glycerol

National Regulations
Chemical inventories: Listed on AICS, DSL, ECL, ECST, ENCS, IECSC, NZIoC, PICCS, SWISS, TSCA, EC inventories
Swiss Ordinance (RS 817.023.21) Annex 6: List of additives (part A), List of binders (part A), List of solvents (part A)
WGK class: 1 (weak water endangering)

Chemical safety assessment

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards
Chronic Health Hazard

CERCLA
No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA
Massachusetts Right To Know Components
Glycerin CAS-No. 56-81-5 Revision Date 2007-03-01
Pennsylvania Right To Know Components
Glycerin CAS-No. 56-81-5 Revision Date 2007-03-01
New Jersey Right To Know Components
Glycerin CAS-No. 56-81-5 Revision Date 2007-03-01
California Prop 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: OTHER INFORMATION

Training advice:

Before using/handling the product one must read carefully present SDS. Always work safely around open hatches on bulk tanks.

Revision Date:

1.0 - Initial Release (EMK), 27APR2015
1.1 – Removed hazard classification (Section 2.) Updated storage conditions (Section 7) and toxicological information (Section 11) to highlight importance of avoiding mist (EMK), 01JUN2015
1.2 – Reviewed, no changes (EMK), 09APR2018
1.3 – Updated sec 5 (EMK), 18FEB2019
1.4 - Reviewed, no changes (EMK), 29JUN2021

Disclaimer:
To the best of our knowledge the information contained herein is accurate. However, neither KIC Chemicals, Inc., nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution.
Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.