



**Supplied by:**  
**Teltherm Instruments Ltd**

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# SAFETY DATA SHEET

## GLYCERINE

### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**SYNONYMS:** C3-H8-O3, glycerin, "glycerin, anhydrous", "glycerin, synthetic", glycerine, glyceritol, "glycyl alcohol", "1, 2, 3-propanetriol", trihydroxypropane, "1, 2, 3-trihydroxypropane"

**PROPER SHIPPING NAME:** Not regulated for transport internationally  
**CAS NUMBER:** 56-81-5  
**UN NUMBER:** Not Regulated

**PRODUCT USE:** As solvent, humectant, plasticiser, emollient, sweetener; in the manufacture of nitroglycerol (explosive), cosmetics, liquid soaps, liqueurs, confectioneries, blacking, printing and copying inks and lubricants. It is also used in the manufacture of elastic glues, lead oxide cements; to keep fabrics pliable; to preserve printing on cotton; for printing rollers; to keep frost from windshields; as antifreeze in automobiles, gas meters and hydraulic jacks, in shock absorber fluids. In fermentation nutrients in production of antibiotics.

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### Section 2 - HAZARDS IDENTIFICATION

#### STATEMENT OF HAZARDOUS NATURE

Classified as Non-Hazardous according to the criteria of the New Zealand Hazardous Substances and New Organisms legislation.

Non-hazardous.  
Health injuries are not known or expected under normal use.  
Adverse ecological effects are not known or expected.

#### PRECAUTIONARY STATEMENTS

##### PREVENTION

Wash hands thoroughly after handling.  
Wear gloves and eye/face protection.

##### RESPONSE

If irritation occurs, seek medical attention.

**24 HOUR EMERGENCY CONTACT TELEPHONE 0800 CHEMCALL 0800 243 622**

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%	Hazardous
Glycerine	56-81-5	> 96	No

### Section 4 - FIRST AID MEASURES

#### SWALLOWED

Immediately give a glass of water.

First aid is not generally required. If in doubt, contact a Poison Centre (0800 764766) or a doctor.

#### EYE

If this product comes in contact with the eyes:

Wash out immediately with fresh running water.

Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

If pain persists or recurs seek medical attention.

Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

#### SKIN

If skin contact occurs:

Immediately remove all contaminated clothing, including footwear.

Flush skin and hair with running water (and soap if available).

Seek medical attention in event of irritation.

#### INHALED

If fumes or combustion products are inhaled remove from contaminated area.

Other measures are usually unnecessary.

#### NOTES TO PHYSICIAN

Treat symptomatically.

### Section 5 - FIRE FIGHTING MEASURES

#### EXTINGUISHING MEDIA

In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions: water, water spray, dry powder, foam, carbon dioxide (CO<sub>2</sub>).

#### FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.

Wear full body protective clothing with breathing apparatus.

Prevent spillage from entering drains or water course.

Use water delivered as a fine spray to control fire and cool adjacent area.

Avoid spraying water onto liquid pools.

DO NOT approach containers suspected to be hot.

Cool fire exposed containers with water spray from a protected location.

If safe to do so, remove containers from path of fire.

#### FIRE/EXPLOSION HAZARD

Combustible.

Slight fire hazard when exposed to heat or flame.

Heating may cause expansion or decomposition leading to violent rupture of containers.

On combustion, may emit toxic fumes of carbon monoxide (CO).

May emit acrid smoke.

Mists containing combustible materials may be explosive.

Combustion products include: carbon dioxide (CO<sub>2</sub>), other pyrolysis products typical of burning organic material.

May emit poisonous fumes of Acrolein if heated above 280 °C. Acrolein appears as a colourless gas in smoke and is highly toxic. It causes severe irritation to exposed skin, eyes and the nasal passage.

May emit corrosive fumes.

#### FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

#### PERSONAL PROTECTIVE EQUIPMENT

Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves).

## Section 6 - ACCIDENTAL RELEASE MEASURES

#### MINOR SPILLS

Slippery when spilt.

Remove all ignition sources.

Contain and clean up all spills immediately.

Avoid breathing vapours and contact with skin and eyes.

Control personal contact by using protective equipment.

Contain and absorb spill with sand, earth, inert material or vermiculite.

Wipe up.

Place in a suitable labelled container for waste disposal.

#### MAJOR SPILLS

Slippery when spilt.

Wear breathing apparatus plus protective gloves.

Prevent spillage from entering drains or water courses.

No smoking, naked lights or ignition sources.

Increase ventilation.

Stop leak if safe to do so.

Contain spill with sand, earth or vermiculite.

Collect recoverable product into labelled containers for recycling.

Absorb remaining product with sand, earth or vermiculite.

Collect solid residues and seal in labelled drums for disposal.

Wash area with plenty of water and detergent.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

#### PROTECTIVE ACTION CRITERIA (PAC) - SCAPA, 2015

Chemical (CAS Number)	PAC-1	PAC-2	PAC-3	Units
Glycerine - mist (56-81-5)	45	180	1100	mg/m <sup>3</sup>

PAC-1: Mild, transient health effects.

PAC-2: Irreversible or other serious health effects that could impair the ability to take protective action.

PAC-3: Life-threatening health effects.

## Section 7 - HANDLING AND STORAGE

#### PROCEDURE FOR HANDLING

Wear protective clothing when risk of exposure occurs.

Avoid contact with incompatible materials.

Keep containers securely sealed when not in use.

Avoid physical damage to containers.

Always wash hands with soap and water after handling.

Use good occupational work practice.

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Observe manufacturer's storing and handling recommendations.  
Do not allow clothing wet with material to stay in contact with skin.

#### SUITABLE CONTAINER

Original packaging.  
Metal can or drum.  
Check all containers are clearly labelled and free from leaks.

#### STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.  
Avoid reaction with strong oxidising agents such as chromium trioxide, acetic anhydride, chromium oxides, calcium oxychloride, alkali metal hydrides, potassium chlorate and potassium permanganate as an explosive or violent reaction may occur.

#### STORAGE REQUIREMENTS

Keep containers securely sealed.  
No smoking, naked lights or ignition sources.  
Store in a cool, dry, well-ventilated area.  
Store away from incompatible materials and foodstuff containers.  
Protect containers against physical damage and check regularly for leaks.  
Observe manufacturer's storing and handling recommendations.

## Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

#### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC
New Zealand Workplace Exposure Standards (WES 2013)	glycerol (Glycerin mist)		10					

#### MATERIAL DATA

The mist is considered to be a nuisance particulate which appears to have little adverse effect on the lung and does not produce significant organic disease or toxic effects.

#### ENGINEERING CONTROLS

##### VENTILATION SYSTEM

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

#### PERSONAL PROTECTION EQUIPMENT (PPE)

##### PERSONAL RESPIRATORS

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

**WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

For more information see Australian/New Zealand Standard, AS/NZS 1715:2009 and AS/NZS 1716:2003.

##### SKIN PROTECTION

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Refer to AS/NZS 2161.1:2000 Occupational Protective Gloves - Selection, use and maintenance.

**EYE PROTECTION:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE**

Oily, colourless, odourless liquid, with syrupy, sweet taste.

**PHYSICAL PROPERTIES**

Miscible with water and alcohol. Insoluble in benzene, ether, chloroform, fixed and volatile oils. Absorbs water from the air. Also absorbs hydrogen sulphide, hydrogen cyanide and sulphur dioxide.

PROPERTY	VALUE
State:	Liquid
Molecular Weight:	92.1
Melting Range (°C):	18
Boiling Range (°C):	290
Solubility in water (g/L):	Miscible
pH (1% solution):	~7
pH (as supplied):	No data available
Specific Gravity (water=1, 20°C):	1.2-1.3
Bulk Density:	No data available
Volatile Component (%vol, 38°C):	0
Relative Vapor Density (air=1):	3.17
Vapour Pressure (kPa):	<0.1
Autoignition Temp (°C):	370
Flash Point (°C):	160
Lower Explosive Limit (%):	3
Upper Explosive Limit (%):	19
Decomposition Temp (°C):	290
Viscosity:	No data available
Evaporation Rate:	Non Volatile

## Section 10 - CHEMICAL STABILITY AND REACTIVITY

**CHEMICAL STABILITY**

Product is stable under normal conditions of use, storage and temperature.

**CONDITIONS TO AVOID**

Avoid excessive heat, direct sunlight, static discharges, moisture and freezing and high temperatures. Decomposes above 290°C.

**INCOMPATIBLE MATERIALS**

Avoid reaction with strong oxidising agents, alkali metal hydrides, potassium chlorate and potassium permanganate as an explosive or violent reaction may occur. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

**HAZARDOUS DECOMPOSITION**

Thermal decomposition can lead to release of Acrolein if heated above 280°C.

**HAZARDOUS REACTIONS**

Hazardous polymerization will not occur.

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## Section 11 - TOXICOLOGICAL INFORMATION

### ACUTE HEALTH EFFECTS

#### SWALLOWED

Ingestion of insignificant quantities may produce nausea and vomiting.

#### EYE

Prolonged eye contact may cause inflammation characterised by a temporary redness of the conjunctiva (similar to windburn).

#### SKIN

Skin contact is not expected to have harmful health effects.

#### INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract.

### CHRONIC HEALTH EFFECTS

No data available.

### TOXICITY AND IRRITATION DATA

#### TOXICITY

Acute Oral Toxicity, Rat, LD<sub>50</sub>: 12600 mg/kg.

Acute Dermal Toxicity, LD<sub>50</sub>: >4000 mg/kg.

Inhalation: No data available.

#### IRRITATION

The material may be irritating to the eye, with prolonged contact causing inflammation.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (non-allergic).

**Sensitisation (respiratory/contact):** No evidence for skin sensitization.

**Carcinogenic effects:** Not classified or listed by IARC, NTP, or Cal Prop65.

**Mutagenic effects:** Not expected to be mutagenic.

**Reproductive or developmental effects:** Not expected to cause adverse reproductive effects.

**Aspiration hazard:** No information available.

**Specific target organ toxicity:** No information available.

## Section 12 - ECOLOGICAL INFORMATION

### ECOTOXICITY

Non-hazardous in the aquatic environment.

### TOXICITY DATA

Fish, (*Carassius auratus*), 24hr LC<sub>50</sub>: >5000 mg/L.

Crustacean, (*Daphnia magna*), 24hr EC<sub>50</sub>: >10000 mg/L.

Algae IC<sub>50</sub>: >2900 mg/l

Bacteria EC<sub>50</sub>: >10000 mg/l (*Pseudomonas putida*).

### Persistence and Degradability

DOD<sub>5</sub>: 82% of ThOD and 86% of COD.

Readily biodegradable: Readily biodegradable under aerobic conditions.

### Mobility

Completely soluble.

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**Environmental Fate (Exposure)**

100% of glycerine is expected to end up in the water phase.

**Bioaccumulative Potential**

Log Kow: -1.76. Glycerine is expected to have a low potential for sorption to soil and is not expected to bioaccumulate.

Calculated bioconcentration factor: 3.162.

DO NOT discharge into sewer or waterways.

**Section 13 - DISPOSAL CONSIDERATIONS**

Recycle wherever possible.

Consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

Dispose of by: Burial in a licensed land-fill or Incineration in a licensed apparatus (after admixture with suitable combustible material).

Empty contaminated packaging should be taken for local recycling, recovery or waste disposal.

**Section 14 - TRANSPORT INFORMATION**

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

Not classified as a Dangerous Good under NZS 5433:2007 Transport of Dangerous Goods on Land.

**Section 15 - REGULATORY INFORMATION****REGULATIONS**

Non-hazardous

Glycerine CAS Number 56-81-5 is listed in the New Zealand Inventory of Chemicals.

Glycerine (CAS: 56- 81- 5) is found on the following regulatory lists;

CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP.

IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances International Council of Chemical Associations (ICCA) - High Production Volume List.

New Zealand Workplace Exposure Standards (WES).

OECD Representative List of High Production Volume (HPV) Chemicals.

**Section 16 - OTHER INFORMATION**

NEW ZEALAND POISON CENTRE 0800 POISON (0800 764 766)

NZ EMERGENCY SERVICES: 111

**Abbreviations:**

ACGIH - American Conference of Governmental Industrial Hygienists.

ACVM - Agricultural Chemicals and Veterinary Medicines

AICS - Australian Inventory of Chemical Substances.

AOX - Absorbable organic halogens.

APF - Assigned Protection Factor.

BOD - Biochemical Oxygen Demand

China IECSC - Inventory of Existing Chemical Substances Produced or Imported in China.

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COD - Chemical Oxygen Demand

DSL - Canadian Domestic Substances List.

EINECS - European Inventory of Existing Commercial Chemical Substances.

ENCS - Japanese Existing and New Chemical substances.

IARC - International Agency for Research on Cancer.

ISHL - Japanese Industrial Safety and Health Law List of Chemicals.

LOEL - Lowest Observed Effect Level.

LD<sub>10</sub> - Lethal Dose Low (the lowest dosage per unit of bodyweight of a substance known to have resulted in fatality in a particular animal species).

NOEC - No Observed Effect Concentration.

NTP - National Toxicology Program.

NZIoC - New Zealand Inventory of Chemicals.

OECD HPV - The Organisation for Economic Co-operation and Development High Product Volume Chemicals.

PEL - Permissible exposure limit.

PPE - Personal Protective Equipment.

Prop 65 - California Proposition 65 List of Chemicals.

RTECS - Registry of Toxic Effects of Chemical substances

STEL - Short term exposure limit.

TOC - Total Organic Carbon.

TSCA - US Toxic Substances Control Act Existing Chemicals.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

VOC - Volatile Organic Compounds.

**Sources of key data used to compile the datasheet:**

Manufacturer's SDS.

**Date of Preparation/Review:** 2016.11.09

Amendments: Added data relating to the release of Acrolein in a fire. Updated formatting and reviewed data.

**DISCLAIMER:** *The information contained in this safety data sheet was obtained from current and reliable sources. This data is supplied without warranty, expressed or implied, regarding its correctness and accuracy. It is the user's responsibility to determine safe conditions for use of this product and to assume liability for loss, injury, damage or expense resulting from improper use of this product.*

End of SDS

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