SECTION 1 – IDENTIFICATION

Product identifier: Glycerol
Biotechnology Grade

Catalogue number: 1120

Other means of identification: 1,2,3-Propanetriol
Glycerin

Recommended use of the chemical and restrictions on use:
Commonly used in sample preparation and gel formation for polyacrylamide gel electrophoresis.
For R&D use only. Not for pharmaceutical, household or other uses.

Supplier's information:

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Monday – Friday, 8:00 a.m. to 6:00 p.m.
+65 6775 7318 (Singapore)
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SECTION 2 – HAZARDS IDENTIFICATION

GHS Classification
Not a dangerous substance or mixture according to the Globally Harmonised System (GHS).

Other hazards - None

SECTION 3 – COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical Identity: Glycerol
Synonyms: Glycerin
1,2,3-propanetriol
Glycol alcohol
Molecular Formula: $C_3H_8O_3$
Molecular Weight: 92.09 g/mol

Component	Classification	Concentration
Glycerol		
CAS-No. 56-81-5 EC-No. 200-289-5		> 95 %

SECTION 4 – FIRST-AID MEASURES

Eye Contact
Immediately flush eyes with copious amounts of water for at least 15 minutes. If symptoms develop or persist, get medical attention.

Skin Contact
Immediately wash skin thoroughly with soap and copious amounts of water. Remove contaminated clothing and shoes. If symptoms develop or persist, get medical attention. Wash clothing and shoes before reuse, or discard in a manner which limits further exposure.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration or if breathing is difficult, give oxygen.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical attention.

Most important symptoms and effects, both acute and delayed
Prolonged or repeated exposure may cause: nausea, headache or vomiting.

Indication of any immediate medical attention and special treatment needed
Data not available.

SECTION 5 – FIRE-FIGHTING MEASURES

Extinguishing Media
Use water spray, dry chemical powder, carbon dioxide or alcohol-resistant foam.

Special hazards arising from the substance or mixture
Carbon oxides.

Special Fire-fighting Procedures
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment as needed. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Environmental Precautions
Minimize entry of material into sewers and drainage systems.

Methods and materials for containment and cleaning up
Clean up spills immediately, observing precautions in the safety data sheet and label. Dispose into a chemical waste container.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling
Use with adequate ventilation as necessary or desired. Wash hands thoroughly after handling. Remove contaminated clothing and wash before reuse. Follow all SDS/ label precautions. Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities
Store in tightly closed container in a cool, well-ventilated area.

SECTION 8 – EXPOSURE CONTROLS/ PERSONAL PROTECTION

Occupational exposure limits

Component	CAS-No.	Value	Control parameters	Basis
Glycerol	56-81-5	PEL (long-term)	10 mg/m³	Singapore. Workplace Safety and Health Act – First Schedule Permissible Exposure Limits of Toxic Substances

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice.

Eye/Face Protection
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin/Hand Protection
Handle with 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.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body protection
Impervious clothing. Type of protective equipment must be selected based on the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection
Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Consult with respirator manufacturer to determine respirator selection, use, and limitations.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

a)	**Appearance**	Clear viscous liquid
b)	**Odour**	Odourless
c)	**Odour Threshold**	Not available
d)	**pH**	5.5 - 8
e)	**Melting/freezing point**	18 °C
f)	**Initial boiling point and boiling range**	290 °C
g)	**Flash point**	160 °C (closed-cup)
h)	**Evaporation rate**	Not available
i)	**Flammability (solid, gas)**	Not available
j)	**Upper/lower flammability or explosive limits**	Lower explosion limit: 10 % (V) Upper explosion limit: 20 % (V)
k)	**Vapour pressure (mm Hg)**	0.003 @ 50 °C
l)	**Vapour density**	3.17
m)	**Relative density**	1.261 g/mL
n)	**Solubility(ies)**	Miscible in water
o)	**Partition coefficient: n-octanol/water**	Not available

p)	**Autoignition temperature**	400 °C
q)	**Decomposition temperature**	Not available
r)	**Viscosity**	1069 mPa.s at 20 °C

SECTION 10 – STABILITY AND REACTIVITY

Reactivity
Data not available.

Chemical stability
Hygroscopic.

Possibility of hazardous reactions
Data not available.

Conditions to avoid
Data not available.

Incompatible material
Strong bases, strong oxidizing agents.

Hazardous decomposition products
Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity
Oral (LD50): 12,600 mg/kg [Rat]
Dermal (LD50): 10,000 mg/kg [Rabbit]

Skin Corrosion/Irritation
Mild skin irritation: 24 hr [Rabbit]

Serious Eye Damage/Eye Irritation
Mild eye irritation: 24 hr [Rabbit]

Respiratory or skin sensitization
Data not available.

Germ cell mutagenicity
Data not available.

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
Data not available.

Specific target organ toxicity - single exposure
Data not available.

Specific target organ toxicity - repeated exposure
Data not available.

Aspiration hazard
Data not available.

Other information
RTECS: MA8050000

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity
LC50 – Oncorhynchus mykiss (rainbow trout) - 67.500 mg/L - 96 hr (Glycerol)
LC50 – Goldfish - > 5000 mg/L – 24 hr (Glycerol)
LC50 – Daphnia magna (water flea) - > 10000 mg/L – 24hr (Glycerol)

Persistence and Degradability
Soluble in water, Persistence is unlikely, based on information available.

Bioaccumulative Potential
Data not available

Mobility in Soil
The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Other Adverse Effect
Data not available

SECTION 13 – DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated Packaging
Dispose off as unused product.

SECTION 14 – TRANSPORT INFORMATION

UN Number
ADR/RID: - IMDG: - IATA-DGR: -

UN Proper Shipping Name:
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA-DGR: Not dangerous goods

Transport Hazard Class(es)

ADR/RID: -	IMDG: -	IATA-DGR: -

Packing Group

ADR/RID: -	IMDG: -	IATA-DGR: -

Environmental Hazards

ADR/RID: no	IMDG: marine pollutant: no	IATA-DGR: no

Special Precaution for Users

Data not available

SECTION 15 – REGULATORY INFORMATION

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

Data not available

SECTION 16 – OTHER INFORMATION

Date of Issue: JUNE 11, 2012 **Date of Revision:** FEBRUARY 23, 2022

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. Axil Scientific Pte Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.