



## CERTIFICATE OF ANALYSIS

Batch number:4425304

Name: GLYCERINE TECH GRADE

Best Before Date: February 2023

Date of analysis: 08.01.2021

TESTS	METHOD	MIN.	MAX.	RESULT	UNIT
Appearance	VISUAL			Clear, colourless, free from particles	
Colour	UTM-44-6.1 (MID)		10	10	APHA Pt/Co
Water Content	UTM-44-10.2 (MID)		0.50	0.06	%

Test by supplier:

TESTS	METHOD	MIN.	MAX.	RESULT	UNIT
Assay	Suppliers Method	99.5		99.9	%
ESTERS	Suppliers Method	8.00		8.05	
REFRACTIVE INDEX @ 20°C	Suppliers Method	1.470	1.475	1.474	
ACIDITY	Suppliers Method		0.20	0.09	
ALDEHYDES	Suppliers Method		10.00	<10.00	ppm
HALOGENATED COMPOUNDS	Suppliers Method		35	<35	ppm
SUGARS	Suppliers Method			Passed	
CHLORIDES	Suppliers Method		10.00	<10.00	ppm
Heavy Metals as Pb	Suppliers Method		5.0	<5.0	ppm
SULPHATED ASH	Suppliers Method		0.01	<0.01	%



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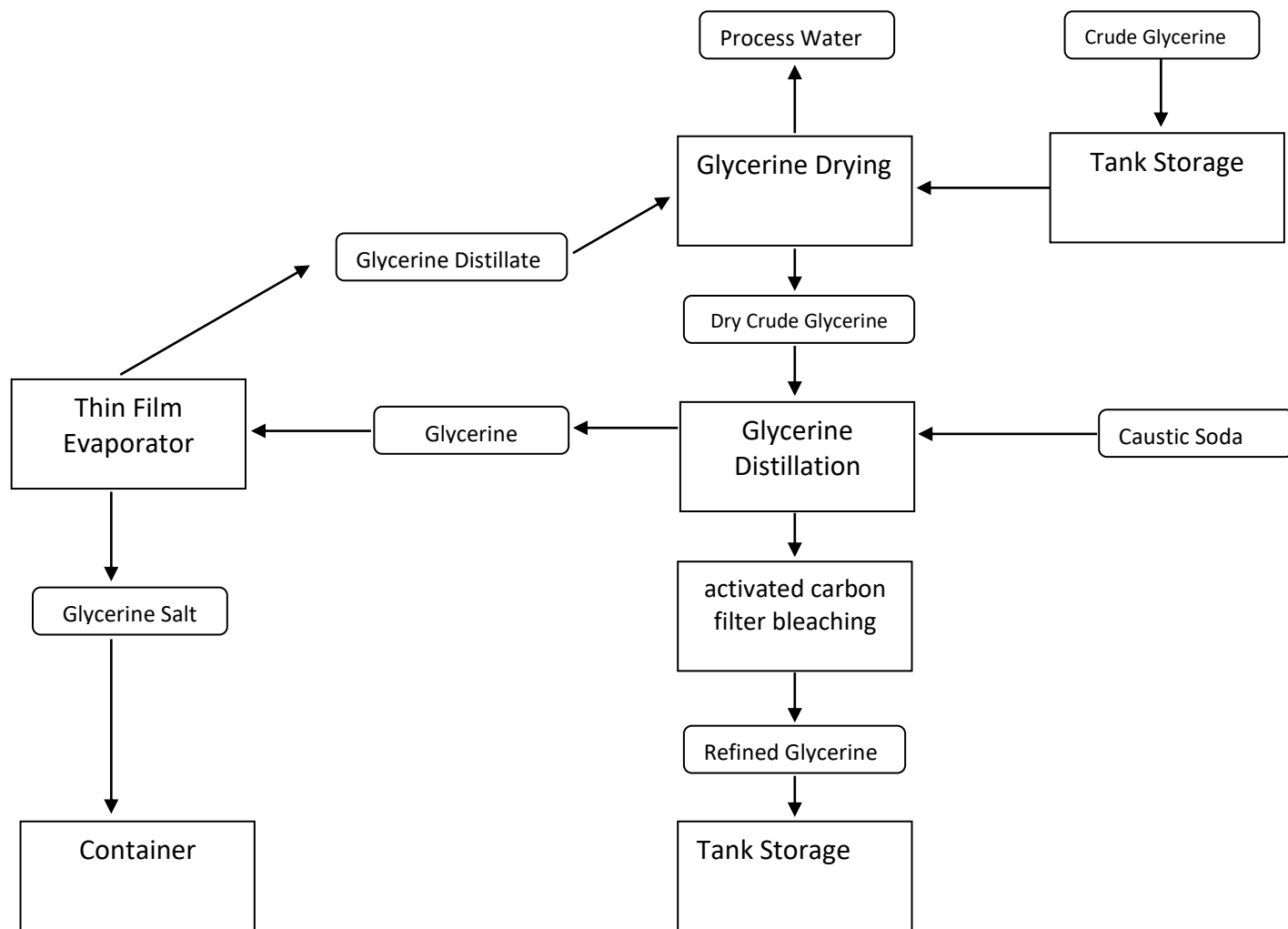
**Test by supplier:**

TESTS	METHOD	MIN.	MAX.	RESULT	UNIT
IMPURITY A & RELATED SUBSTANCES	Suppliers Method		0.10	<0.10	%

The specifications mentioned above have to be considered as technical information. However, since Madar Corporation Limited as a material supplier is unable to exercise any control over the use of the products, including designing, testing, specifying a compound or product incorporating any of the products, is the sole responsibility of the buyer who shall assume any consequences thereof, whether direct or indirect, and whatsoever its nature, and the seller makes no warranties in respect thereof.

Above information does not release the customer from making their own controls upon receipt of the product.

## Technical Refined Glycerine Production Flow Chart





## SAFETY DATA SHEET

### GLYCERINE

#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

##### 1.1. Product identifier

**Product name** GLYCERINE

**Synonyms; trade names**

GLYCEROL, GLYCYL ALCOHOL, 1,2,3 PROPANETRIOL, PRICERINE, GLYCAMED, GLYCERINE 99.5% VEG, GLYCERINE MIN 99.5% PH, GLYCERINE VEG, GLYCERINE VEG FG/PH NCM, GLYCERINE VEG KOSHER FG/PH, GLYCERINE VEG KOSHER FG/PH UNR, GLYCERINE VEGETABLE 99.7%, PALMERA G995E, GLYCERIN 99.5% VEG. PH EUR, GLYCEROL E422 99.5% VEG., GLYCEROL 86.5% VEG, GLYCERIN 99.5%, VEGETABILISK, GLYCERIN MIN 99.5%, GLYCERIN MIN 99.5%, EUR PH, GLYCERIN MIN 99.5% USP, GLYCERIN PHARMA 85%, GLYCEROL E 422 86.5% VEG, GLYCEROL E 422 99.5% VEG SANTA MARIA, GLYCERINE VEG FG/PH KOSH NCM, GLYCERINE VEG FG/PH KSH REFNCM, GLYCERINE VEGETABLE 99.8%, PALMERA G995V, GLYCEROL 2, GLYCERINE 4813, GLYCERINE 4810, Kollisolv G99, GLYCERINE TECH VEG/ANIMAL, GLYCERINE PH EUR 86.5 %, PALMERA G995T, GLYCERINE 99.7%, GLYCERINE TECH GRADE, GLYCERINE FCC ED. 7, GLYCERINE 99.5% TECHNICAL, GLYCEROL 99.5% VEG, GLYCERINE ROO, MOON OU GLYCERINE, SUPEROL KPO GLYCERIN, GLYCAMED 99.7% KOSHER, GLYCERINE 4827, GLYCERINE VEG FG/PH 4808K, GLYCERINE 4810 K, GLYCERINE 4811, GLYCERINE 4811K, GLYCAMED 99.7%, GLYCERINE VEG 86.5% DEMIN, E-GLYCERIN FG KOSHER, GLYCERINE VEG FG/PH KOSHER, GLYCERINE USP/FCC KSH VNY, GLYCERINE VEG FG/PH 4804K OLN, GLYCERINE USP-EP 99.7%, GLYCERINE 4812, GLYCERINE VEGETABLE EP, MASCEROL, 3109931 CREMERGLYC REFINED 99.5%, GLYCERINE RSPO MB, MASCEROL 99.7 ROO FG/EP KSH, MASCEROL 99.7 VEG FG/EP KSH, GLYCERINE 86% PH EUR, SUPEROL K+

**REACH registration notes** Exempt -Annex V exempted by Article 2(7)

**CAS number** 56-81-5

**EC number** 200-289-5

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Industrial application Cosmetics Pharmaceuticals Food industry

##### 1.3. Details of the supplier of the safety data sheet

**Supplier** MADAR Corporation Limited  
19 - 20 Sandleheath Industrial Estate  
Fordingbridge  
SP6 1PA  
+44 1425 655 555  
technical@madarcorporation.co.uk

##### 1.4. Emergency telephone number

**Emergency telephone** 19-20 Sandleheath Industrial Estate, Fordingbridge, Hampshire, SP6 1PA, UK  
Tel: 01425 655555 Email: technical@madarcorporation.co.uk  
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# GLYCERINE

Sds No. 20124

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Not Classified
Environmental hazards	Not Classified

### 2.2. Label elements

EC number	200-289-5
Hazard statements	NC Not Classified

### 2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Product name	GLYCERINE
REACH registration notes	Exempt -Annex V exempted by Article 2(7)
CAS number	56-81-5
EC number	200-289-5
Composition comments	The data shown are in accordance with the latest EC Directives.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

Inhalation	Move affected person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Give plenty of water to drink. Get medical attention if any discomfort continues.
Skin contact	Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
Eye contact	Remove any contact lenses and open eyelids wide apart. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

Eye contact	May cause temporary eye irritation.
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### 4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
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## GLYCERINE

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

### **5.2. Special hazards arising from the substance or mixture**

**Specific hazards** When heated and in case of fire, toxic vapours/gases may be formed.

**Hazardous combustion products** Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of the following substances: Carbon.

### **5.3. Advice for firefighters**

**Protective actions during firefighting** Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Contain and collect extinguishing water.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

### **6.2. Environmental precautions**

**Environmental precautions** Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

### **6.3. Methods and material for containment and cleaning up**

**Methods for cleaning up** Stop leak if possible without risk. Absorb in vermiculite, dry sand or earth and place into containers. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Avoid the spillage or runoff entering drains, sewers or watercourses.

### **6.4. Reference to other sections**

**Reference to other sections** For personal protection, see Section 8. For waste disposal, see Section 13.

## **SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**

**Usage precautions** Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation. Do not eat, drink or smoke when using this product.

### **7.2. Conditions for safe storage, including any incompatibilities**

**Storage precautions** Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep away from heat, sparks and open flame. Avoid contact with the following materials: Strong alkalis. Strong oxidising agents. Strong acids.

### **7.3. Specific end use(s)**

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## **SECTION 8: Exposure controls/Personal protection**

### **8.1. Control parameters**

#### **Occupational exposure limits**

19-20 Sande Heath Industrial Estate, Fordingbridge, Hampshire, SP6 1PA, UK

Tel: 01425 655555 Email: technical@madarcorporation.co.uk

## GLYCERINE

Long-term exposure limit (8-hour TWA): WEL 10 mg/m<sup>3</sup> mist

WEL = Workplace Exposure Limit.

**DNEL** Industry - Inhalation; Long term local effects: 56 mg/m<sup>3</sup>  
 General population - Inhalation; Long term local effects: 33 mg/m<sup>3</sup>  
 General population - Oral; Long term systemic effects: 229 mg/kg/day

**PNEC** - Fresh water; 0.885 mg/l  
 - marine water; 0.0885 mg/l  
 - Intermittent release; 8.85 mg/l  
 - STP; 1000 mg/l  
 - Soil; 0.141 mg/kg  
 - Sediment (Freshwater); 3.3 mg/kg  
 - Sediment (Marinewater); 0.33 mg/kg

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation.

#### Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

#### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacture, who can provide information about the breakthrough time of the glove material. Rubber (natural, latex). Viton rubber (fluoro rubber). Polyvinyl chloride (PVC). To protect hands from chemicals, gloves should comply with European Standard EN374.

#### Other skin and body protection

Wear appropriate clothing to prevent skin contamination.

#### Hygiene measures

Wash at the end of each work shift and before eating, smoking and using the toilet.

#### Respiratory protection

In case of inadequate ventilation or when the product is heated, use suitable respiratory equipment with gas filter (type A2). EN 136/140/141/145/143/149

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	No information available.
Odour threshold	No information available.
pH	pH (concentrated solution): 5 - 8
Melting point	~ 18°C
Initial boiling point and range	290°C @ 760 mm Hg

## GLYCERINE

Flash point	> 175°C Open cup.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	< 1 Pa @ 20°C
Vapour density	~ 3.17
Relative density	1.26 @ 20°C
Bulk density	No information available.
Solubility(ies)	Soluble in water. Soluble in the following materials: Ethanol. acetone
Partition coefficient	log Pow: -1.76
Auto-ignition temperature	>370°C
Decomposition Temperature	No information available.
Viscosity	1300 - 1500 mPa s @ 20°C
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.

### 9.2. Other information

Other information	No information required.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	No information available.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	The following materials may react with the product: Oxidising materials. Acids.
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### 10.2. Chemical stability

Stability	The substance is hygroscopic and will absorb water by contact with the moisture in the air.
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### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No information available.
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## GLYCERINE

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid excessive heat for prolonged periods of time. Water, moisture.

### 10.5. Incompatible materials

**Materials to avoid** Strong acids. Strong alkalis. Strong oxidising agents.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of the following substances: Carbon.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**Acute toxicity oral (LD<sub>50</sub> mg/kg)** 27,200.0

**Species** Rat

**ATE oral (mg/kg)** 27,200.0

#### Acute toxicity - dermal

**Acute toxicity dermal (LD<sub>50</sub> mg/kg)** 56,750.0

**Species** Guinea pig

**ATE dermal (mg/kg)** 56,750.0

#### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** LC<sub>50</sub> > 2.75 mg/l, Inhalation, Dust/Mist, Rat (sat. atm. 0 Death. )

#### Skin corrosion/irritation

**Animal data** Based on available data the classification criteria are not met.

#### Serious eye damage/irritation

**Serious eye damage/irritation** Based on available data the classification criteria are not met.

#### Respiratory sensitisation

**Respiratory sensitisation** Based on available data the classification criteria are not met.

#### Skin sensitisation

**Skin sensitisation** Based on available data the classification criteria are not met.

#### Germ cell mutagenicity

**Genotoxicity - in vitro** Based on available data the classification criteria are not met.

#### Carcinogenicity

**Carcinogenicity** Based on available data the classification criteria are not met.

#### Reproductive toxicity

**Reproductive toxicity - fertility** Based on available data the classification criteria are not met.

#### Specific target organ toxicity - single exposure

**STOT - single exposure** Based on available data the classification criteria are not met.

#### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Based on available data the classification criteria are not met.

## GLYCERINE

### Aspiration hazard

**Aspiration hazard** Based on available data the classification criteria are not met.

**Inhalation** Gas or vapour in high concentrations may irritate the respiratory system.

**Ingestion** May cause discomfort if swallowed.

**Skin contact** Slightly irritating.

**Eye contact** May cause temporary eye irritation.

### SECTION 12: Ecological information

**Ecotoxicity** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

#### 12.1. Toxicity

**Toxicity** Not considered toxic to fish.

#### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 54000 mg/l, *Oncorhynchus mykiss* (Rainbow trout)  
LC<sub>50</sub>, 96 hour: >= 885 mg/l, *Pimephales promelas* (Fat-head Minnow)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 24 hours: > 10000 mg/l, *Daphnia magna*

**Acute toxicity - aquatic plants** EC<sub>50</sub>, 72 hours: > 2900 mg/l, Freshwater algae

**Acute toxicity - microorganisms** EC<sub>50</sub>, 3 hour: > 1000 mg/l, Activated sludge

#### 12.2. Persistence and degradability

**Persistence and degradability** The product is readily biodegradable.

**Biodegradation** - Degradation 82%: 20 days  
OECD 301D  
- Degradation 63%: 28 day  
OECD 301C

**Biological oxygen demand** 0.87 g O<sub>2</sub>/g substance

#### 12.3. Bioaccumulative potential

**Bioaccumulative potential** The product is not bioaccumulating.

**Partition coefficient** log Pow: -1.76

#### 12.4. Mobility in soil

**Mobility** The product is soluble in water.

#### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This substance is not classified as PBT or vPvB according to current EU criteria.

#### 12.6. Other adverse effects

**Other adverse effects** No information available.

### SECTION 13: Disposal considerations

## GLYCERINE

### **13.1. Waste treatment methods**

<b>General information</b>	Waste should be treated as controlled waste. Do not puncture or incinerate, even when empty.
<b>Disposal methods</b>	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

## **SECTION 14: Transport information**

<b>General</b>	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).
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### **14.1. UN number**

Not applicable.

### **14.2. UN proper shipping name**

Not applicable.

### **14.3. Transport hazard class(es)**

No transport warning sign required.

### **14.4. Packing group**

Not applicable.

### **14.5. Environmental hazards**

Environmentally hazardous substance/marine pollutant  
No.

### **14.6. Special precautions for user**

Not applicable.

### **14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code**

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

## **SECTION 15: Regulatory information**

### **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

<b>EU legislation</b>	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.
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### **15.2. Chemical safety assessment**

No chemical safety assessment has been carried out.

### **Inventories**

#### **EU - EINECS/ELINCS**

All the ingredients are listed or exempt.

## **SECTION 16: Other information**

## GLYCERINE

### Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.  
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.  
 CAS: Chemical Abstracts Service.  
 DNEL: Derived No Effect Level.  
 IATA: International Air Transport Association.  
 IMDG: International Maritime Dangerous Goods.  
 Kow: Octanol-water partition coefficient.  
 LC<sub>50</sub>: Lethal Concentration to 50 % of a test population.  
 LD<sub>50</sub>: Lethal Dose to 50% of a test population (Median Lethal Dose).  
 PBT: Persistent, Bioaccumulative and Toxic substance.  
 PNEC: Predicted No Effect Concentration.  
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.  
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.  
 vPvB: Very Persistent and Very Bioaccumulative.  
 IARC: International Agency for Research on Cancer.  
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.  
 cATpE: Converted Acute Toxicity Point Estimate.  
 BCF: Bioconcentration Factor.  
 BOD: Biochemical Oxygen Demand.  
 EC<sub>50</sub>: 50% of maximal Effective Concentration.  
 LOAEC: Lowest Observed Adverse Effect Concentration.  
 LOAEL: Lowest Observed Adverse Effect Level.  
 NOAEC: No Observed Adverse Effect Concentration.  
 NOAEL: No Observed Adverse Effect Level.  
 NOEC: No Observed Effect Concentration.  
 LOEC: Lowest Observed Effect Concentration.  
 DMEL: Derived Minimal Effect Level.  
 EL50: Exposure Limit 50  
 hPa: Hectopascal  
 LL50: Lethal Loading fifty  
 OECD: Organisation for Economic Co-operation and Development  
 POW: Octanol-water partition coefficient  
 SCBA: self-contained breathing apparatus  
 STP: Sewage Treatment Plant  
 VOC: Volatile Organic Compounds

### Classification abbreviations and acronyms

Acute Tox. = Acute toxicity  
 Aquatic Acute = Hazardous to the aquatic environment (acute)  
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

### Key literature references and sources for data

Supplier's information.

### Classification procedures according to Regulation (EC) 1272/2008

NC: On basis of test data.

### Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

### Revision date

15/01/2021

## GLYCERINE

<b>Version number</b>	3.005
<b>Supersedes date</b>	23/12/2020
<b>SDS number</b>	20124
<b>SDS status</b>	Approved.
<b>Signature</b>	Jitendra Panchal

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## GLYCERINE TECH GRADE

JUNE 2019

**Synonyms:** Glycerol, Glycyl Alcohol, 1,2,3 Propanetriol

**CAS NO:** 56-81-5

**FORMULA:** C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>

**EINECS NO:** 200-289-5

<b><u>Test</u></b>	<b><u>Specification</u></b>
Appearance	Clear, colourless
Assay (%wt/wt)	99.5 Min
Esters (ml 0.1 m HCL)	8 Min
Colour (APHA/Hazen)	10 Max
Water (%wt/wt)	0.5 Max
Refractive Index @ 20°C	1.470 – 1.475
Acidity (ml 0.1m NaOH)	0.2 Max
Aldehydes (ppm)	10 Max
Halogenated compounds (ppm)	35 Max
Sugars	Negative
Chlorides (ppm)	10 Max
Heavy metals as Pb (ppm)	5 Max
Sulphated ash (%wt/wt)	0.01 Max

**Note: For use in Technical / Industrial applications only**

**Revision 01**