1 Identification

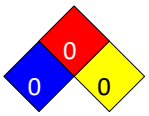
· ***Trade name:*** *Refined Glycerin (USP/ BP/ IP/JP/EP/FCC)*
INCI Name: *Glycerin*
· ***CAS Number:***
56-81-5
· ***EC number:***
200-289-5
· ***Relevant identified uses of the substance or mixture and uses advised against:***
No further relevant information available.
· ***Application of the substance / the mixture***
1) Used in food industry
2) Used in Pharmaceutical and personal care applications
3) Used as an anti-freeze for automotive applications
4) Used for biodiesel production

· ***Details of the supplier of the safety data sheet***
· ***Manufacturer/Supplier:*** *Godrej Industries Ltd.*
Unit No -1 *Plot No N 73, Addl MIDC, Anand Nagar , Ambernath East. Thane.-Maharashtra, India*
Unit No -2 *Plot No 3, Village Kanerao, Taluka – Valia, District – Bharuch , Gujrat, India*
· ***Information department:***
Mr. RV Dubhashi
T: 91-22 2519 4768 Office hours only (08.30 – 17.00 hours GMT +5.5 hours)
· ***Emergency telephone number:***
Emergency telephone number: ***Unit 01****:- 0251 262 4292,* ***Unit 02****- 02643 270756*
Opening hours: Office hours only (8.30 AM- 17.00 PM)
Other Comments (e.g. language(s) of the phone service): English

2. Hazard(s) identification

· ***Classification of the substance or mixture***
The substance is not classified according to the Globally Harmonized System (GHS).

· ***Label elements***
· ***GHS label elements*** *Not applicable*
· ***Hazard pictograms*** *Not applicable*
· ***Signal word*** *Not applicable*
· ***Hazard statements*** *Not applicable*
· ***Classification system:***
· ***NFPA ratings (scale 0 - 4)***



Health = 0
Fire = 0
Reactivity = 0

Trade name: Refined Glycerin

· ***HMIS-ratings (scale 0 - 4)***

HEALTH 0	*Health = 0*
FIRE 0	*Fire = 0*
REACTIVITY 0	*Reactivity = 0*

· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

3 Composition/information on ingredients

· ***Chemical characterization: Substances***
· ***CAS No. Description***
56-81-5 glycerol

· ***Components:***	
% Glycerol	*>99.50*
% Water	*0.10 – 0.30*

· ***Identification number(s)***
· ***EC number:*** *200-289-5*
· ***Additional information:***
Molecular formula: $C_3H_8O_3$
Molecular weight: 92.09 $g \cdot mol^{-1}$

4 First-aid measures

· ***Description of first aid measures***
· ***General information:*** *Seek medical treatment.*
· ***After inhalation:*** *Move person to fresh air; if effects occur, consult a physician.*
· ***After skin contact:*** *Wash skin with plenty of water.*
· ***After eye contact:***
Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes.
If effects occur, consult a physician, preferably an ophthalmologist.
· ***After swallowing:***
If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
· ***Information for doctor:***
No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
· ***Most important symptoms and effects, both acute and delayed***
No further relevant information available.
· ***Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

(Contd. on page 3)

5 Fire-fighting measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:***
Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. May spread fire. Alcohol resistant foams (ATC type) are preferred.
· ***For safety reasons unsuitable extinguishing agents:*** *Do not use direct water stream*
· ***Special hazards arising from the substance or mixture***
Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
· ***Advice for firefighters***
· ***Protective equipment:***
Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).
· ***Additional information***
Keep people away. Isolate fire and deny unnecessary entry. Burning liquids may be extinguished by dilution with water.
Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

6. Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures***
Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment.
Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.
· ***Environmental precautions:***
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· ***Methods and material for containment and cleaning up:***
Recover spilled material if possible.
Absorb with materials such as: Sand. Collect in suitable and properly labeled containers.
· ***Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· ***Handling:***
· ***Precautions for safe handling*** *Handle with good hygiene and safety procedures*
· ***Information about protection against explosions and fires:***
No special measures required.

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
Use leak-proof and compatible Drums. Store in dry and well ventilated locations at 25.0 – 30.0°C, Away from direct sunlight.
· ***Information about storage in one common storage facility:*** *Store away from air.*
· ***Further information about storage conditions:*** *Keep container tightly closed.*
· ***Specific end use(s)***
1) Used in food industry
2) Used in Pharmaceutical and personal care applications
3) Used as an anti-freeze for automotive applications
4) Used for biodiesel production

8 Exposure controls/personal protection

· ***Control parameters***

· ***Components with limit values that require monitoring at the workplace:***	
56-81-5 glycerol	
PEL	*Long-term value: 15* 5** mg/m³ *total dust **respirable fraction*
TLV	*TLV withdrawn-insufficient data human occup. exp.*

· ***Exposure controls***
· ***Personal protective equipment:***
· ***General protective and hygienic measures:***
Wash hands before breaks and immediately after handling the product. When using do not eat or drink. Avoid contact with skin, eyes and clothing.Remove and wash contaminated clothes before re-use. Preventive hand protection is recommended.
· ***Breathing equipment:***
If material is heated or sprayed, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.
· ***Protection of hands:***
Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms
· ***Material of gloves***
Butyl rubber. Polyethylene. Neoprene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). Ethyl vinyl alcohol laminate ("EVAL").
· ***Penetration time of glove material*** *greater than 120 minutes*
· ***Eye protection:*** *Goggles recommended during refilling.*
· ***Body protection****: Apron*

9 Physical and chemical properties

· ***Information on basic physical and chemical properties***	
· ***General Information***	
· ***Appearance:***	
Form:	*clear Viscous liquid*
Color:	*Colorless*
· ***Odor:***	*Odorless*
· ***Change in condition***	
Melting point/Melting range:	*18.17 °C (65 °F) (ca. 101.3 kPa)*
Boiling point/Boiling range:	*290 °C (554 °F) (760 mm Hg)*
· ***Flash point:***	*199 °C (390 °F) (Penki-Martens closed cup)*
· ***Flammability (solid, gaseous):***	*Product is not flammable.*
· ***Ignition temperature:***	*370 °C (698 °F)*
· ***Auto igniting:***	*Product is not self-igniting.*
· ***Danger of explosion:***	*Product does not present an explosion hazard*
· ***Vapor pressure at 20 °C (68 °F):***	*0.1 mm*
· ***Density at 20 °C (68 °F):***	*1.26 g/cm³ (10.515 lbs/gal)*
· ***Solubility in / Miscibility with***	
Water at 25 °C (77 °F):	*The product is more soluble in water*
· ***Partition coefficient (n-octanol/water) at 25 °C (77 °F):***	*-1.75 log POW (pH=7.4)*
· ***Viscosity:***	
Dynamic at 20 °C (68 °F):	*1412 mPas*
· ***Other information***	*No further relevant information available.*

10. Stability and reactivity

· ***Reactivity*** *No further relevant information available.*
· ***Chemical stability*** *Stable under recommended storage conditions. Hygroscopic*
· ***Thermal decomposition / conditions to be avoided:***
Decomposition products depend upon temperature, air supply and the presence of other materials.
Decomposition products can include and are not limited to: Acrolein.
· ***Possibility of hazardous reactions*** *Hazardous Polymerization: Will not occur.*
· ***Conditions to avoid***
Exposure to elevated temperatures can cause product to decompose. Avoid moisture.
· ***Incompatible materials:*** *Avoid contact with: Strong oxidizers.*

· ***Hazardous decomposition products:***
During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

11 Toxicological information

· ***Information on toxicological effects***
· ***Acute toxicity:***

· ***LD/LC50 values that are relevant for classification:***		
Oral	*LD 50*	*23000 mg/kg bw (mouse)*
		≥ 10000 mg/kg bw (Guinea pig)
Inhalative	*LC50(7-h)*	*4655 mg-min/liter (rat male)*

· ***Primary irritant effect:***
· ***on the skin:*** *No irritant effect.*
· ***on the eye:*** *No irritating effect.*
· ***Sensitization:*** *No sensitizing effects known.*
· ***Subacute to chronic toxicity:***
Repeated dose toxicity:
The chronic toxicity of glycerin was examined in rats fed the test material in the diet at concentrations of 5, 10 and 20% for up to two years. The NOAEL was 8000-10,000 mg/kg bw based on the absence of treatment related effects in high dose animals.
· ***Additional toxicological information:***
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The substance is not subject to classification.

· ***Carcinogenic categories***
· ***IARC (International Agency for Research on Cancer)*** *Substance is not listed.*
· ***NTP (National Toxicology Program)*** *Substance is not listed.*
· ***OSHA-Ca (Occupational Safety & Health Administration)*** *Substance is not listed.*

12 Ecological information

· ***Toxicity***

· ***Aquatic toxicity:***	
LC50 (48-h)	*1955 mg/L (Daphnia magna)*
LC50 (96-h)	*54000 mg/L (Oncorhynchus mykiss)*

· ***Persistence and degradability***
Glycerin was nearly completely degraded within 24 hours.
Result: The product is readily biodegradable

· ***Behavior in environmental systems:***
· ***Bioaccumulative potential***
Bioaccumulation factor:
(BCF) Value: 3.2 (predicted)
Result: Non-bioaccumulative
· ***Mobility in soil***
Soil Adsorbtion Coefficient =1 (Estimated)
Result: Very mobile
· ***Additional ecological information:***
· ***General notes:***
Water hazard class 1 (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*
· ***Other adverse effects*** *No further relevant information available.*

13. Disposal considerations

· ***Waste treatment methods***
· ***Recommendation:***
Dispose off waste material according to local, state and federal regulations.
Do not dump into any sewers, on the ground, or into any body of water.

· ***Uncleaned packagings:***
· ***Recommendation:*** *Disposal must be made according to official regulations.*

14. Transport information

· ***UN-Number***	
· ***DOT, ADR, ADN, IMDG, IATA***	*Not applicable*
· ***UN proper shipping name***	
· ***DOT, ADR, ADN, IMDG, IATA***	*Not applicable*
· ***Transport hazard class(es)***	
· ***DOT, ADR, ADN, IMDG, IATA***	
· ***Class***	*Not applicable*
· ***Packing group***	
· ***DOT, ADR, IMDG, IATA***	*Not applicable*
· ***Environmental hazards:***	
· ***Marine pollutant:***	*No*

· ***Special precautions for user***	*Not applicable.*
· ***Transport in bulk according to Annex II of MARPOL73/78 and the IBC Cod***	*Not applicable.*
· ***UN "Model Regulation":***	*Not applicable*

15 Regulatory information

· ***Safety, health and environmental regulations/legislation specific for the substance or mixture***
· ***Sara***
· ***Section 355 (extremely hazardous substances):*** *Substance is not listed.*
· ***Section 313 (Specific toxic chemical listings):*** *Substance is not listed.*
· ***TSCA (Toxic Substances Control Act):*** *Substance is listed.*
· ***Proposition 65***
· ***Chemicals known to cause cancer:*** *Substance is not listed.*
· ***Chemicals known to cause reproductive toxicity for females:*** *Substance is not listed.*
· ***Chemicals known to cause reproductive toxicity for males:*** *Substance is not listed.*
· ***Chemicals known to cause developmental toxicity:*** *Substance is not listed.*

· ***Carcinogenic categories***
· ***EPA (Environmental Protection Agency)*** *Substance is not listed.*
· ***TLV (Threshold Limit Value established by ACGIH)*** *Substance is not listed.*
· ***NIOSH-Ca (National Institute for Occupational Safety and Health)***
Substance is not listed.
· ***GHS label elements*** *Not applicable*
· ***Hazard pictograms*** *Not applicable*
· ***Signal word*** *Not applicable*
· ***Hazard statements*** *Not applicable*

· ***National regulations:***

· ***Other regulations, limitations and prohibitive regulations***
EU- Listed
Canada-DSL – Listed
China-NEPA (IECSC) – Listed New
Zealand (NZIoC) – Listed Australia-
AICS –Not Listed Japan MITI-Listed
Philippine PICSS-Listed
· ***Chemical safety assessment:*** *A Chemical Safety Assessment is not applicable*

16. Other information

The information presented here is believed to be accurate and pertains only to the product when stored in a sealed condition, as prescribed here. The information is given in good faith, but no warranty, express or implied, is made. Users should make their own investigations, for their specific applications and processes, to determine the suitability of the safety information mentioned here. Godrej Industries Limited will in no way be liable for any claims, losses and / or damages of any third party, or for lost profits, or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, from the use of this product.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· ***Department issuing SDS:*** *Product safety department.*

· ***Contact:***
Mr. rv.dubhashi@godrejinds.com
T: 91-22 2519 4768· ***Date of preparation / last revision*** *01.04.2021*

· ***Abbreviations and acronyms:***
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

· ***Sources***
-Occupational Safety & Health Administration (OSHA)
https://www.osha.gov/Publications/OSHA3514.html
-Wikipedia-applications
https://en.wikipedia.org/wiki/Glycerol
-ECHA-registered dossier
http://apps.echa.europa.eu/registered/data/dossiers/DISS-9d855cc7-316c-2a21-e044-00144f67d249/AGGR-f4ad8717-5163-4914-9d89-da1d7c6631d5 DISS-9d855cc7-316c-2a21-e044-00144f67d249.html GEN RESULTS HD
-PBT profiler
http://www.pbtprofiler.net/Results.asp

.

**** Data compared to the previous version altered.***

- *Section 1: Identification of the substance/mixture and of the company/undertaking*
- *Section 3: Composition/information on ingredients*
- *Section 4: First-aid measures.*
- *Section 5: Fire-fighting measures*
- *Section 6: Accidental Release measures*
- *Section 7: Handling and storage.*
- *Section 8: Exposure Controls/Personal protection.*
- *Section 9: Physical and Chemical properties.*
- *Section 10: Stability and Reactivity.*
- *Section 11: Toxicological Information.*
- *Section 12: Ecological Information.*
- *Section 13: Disposal consideration*
- *Section 15: Regulatory information*
- *Section 16: Other information*