

# Material Safety Data Sheets

## 1. IDENTIFICATION

|                     |                                                                                                                                                                                        |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name        | Glycerin                                                                                                                                                                               |
| Other Names         | 1,2,3-Propanetriol; Glycerin; Glycerol (Vegetable source); Glycyl Alcohol                                                                                                              |
| Code No             | 100-GL-2                                                                                                                                                                               |
| Uses                | Emulsifier, emollient, plasticizer, humectant, sweetener, antifreeze, in surface coatings and paints, cosmetics, drug and food products. Intermediate for making glycerol derivatives. |
| Chemical Family     | No Data Available                                                                                                                                                                      |
| Chemical Formula    | $C_3H_8O_3$                                                                                                                                                                            |
| Chemical Name       | Glycerine                                                                                                                                                                              |
| Product Description | No Data Available                                                                                                                                                                      |
| Company             | Arman sina.co                                                                                                                                                                          |
| Contact Information | <a href="mailto:info@armansina.com">info@armansina.com</a><br><a href="http://www.armansina.com">www.armansina.com</a>                                                                 |

## 2. HAZARD IDENTIFICATION

Hazard Classification NOT hazardous

Symbol



## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients

| Chemical Entity      | Formula     | CAS Number | Proportion     |
|----------------------|-------------|------------|----------------|
| 1, 2, 3-Propanetriol | $C_3H_8O_3$ | 56-81-5    | 99.0 - 100.0 % |

#### 4. FIRST AID MEASURES

##### Description of necessary measures according to routes of exposure

|                                           |                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Swallowed                                 | Rinse mouth. Call a POISON CENTRE or doctor/physician if you feel unwell.                                                                                                                                                                                                                                                                     |
| Eye                                       | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops or persists. Get medical attention if irritation develops and persists.                                                                                                     |
| Skin                                      | Remove contaminated clothing. Wash off with soap and plenty of water. Get medical attention if irritation develops or persists. If skin irritation occurs: Get medical advice/attention.                                                                                                                                                      |
| Inhaled                                   | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention, if needed.                                                                                                                                                                                                    |
| Advice to Doctor                          | Treat symptomatically based on individual reactions of patient and judgement of doctor.<br>General advice: If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. |
| Medical Conditions Aggravated by Exposure | No information available on medical conditions which are aggravated from exposure to this product.                                                                                                                                                                                                                                            |

#### 5. FIRE FIGHTING MEASURES

|                                    |                                                                                                                                                                                                                          |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Measures                   | Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk.                              |
| Flammability Conditions            | Product is a combustible liquid.                                                                                                                                                                                         |
| Extinguishing Media                | In case of fire, appropriate extinguishing media include water, Alcohol resistant foam, Carbon Dioxide or dry chemical.                                                                                                  |
| Fire and Explosion Hazard          | Contact of glycerine with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate, or Potassium Permanganate may cause an explosion.                                    |
| Hazardous Products of Combustion   | During burning poisonous acrolein may be formed.                                                                                                                                                                         |
| Special Fire Fighting Instructions | Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.                                                                                                          |
| Personal Protective Equipment      | Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit. |
| Flash Point                        | 180 °C                                                                                                                                                                                                                   |
| Lower Explosion Limit              | No Data Available                                                                                                                                                                                                        |
| Upper Explosion Limit              | No Data Available                                                                                                                                                                                                        |
| Auto Ignition Temperature          | No Data Available                                                                                                                                                                                                        |
| Hazchem Code                       | No Data Available                                                                                                                                                                                                        |

#### 6. ACCIDENTAL RELEASE MEASURES

|                                      |                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Response Procedure           | Eliminate all sources of ignition. Increase ventilation. Avoid walking through spilled product as it may be slippery. Use clean, non-sparking tools and equipment.                                                                                                                                                                                                                     |
| Clean Up Procedures                  | Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.<br>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for reuse. |
| Containment                          | Stop leak if safe to do so.                                                                                                                                                                                                                                                                                                                                                            |
| Decontamination                      | Following product recovery, flush area with water.                                                                                                                                                                                                                                                                                                                                     |
| Environmental Precautionary Measures | Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.                                                                                                                                                                                                              |
| Evacuation Criteria                  | Evacuate all unnecessary personnel.                                                                                                                                                                                                                                                                                                                                                    |
| Personal Precautionary Measures      | Personnel involved in the clean up should wear full protective clothing as listed in section 8.                                                                                                                                                                                                                                                                                        |

## 7. HANDLING AND STORAGE

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Handling  | No special precautions required, but avoid eye and skin contact as part of normal industrial hygiene. Prevent formation of mist. Eye and skin contact should be avoided if handling at elevated temperatures. Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours.    |
| Storage   | Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Avoid contact with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate, or Potassium Permanganate. This product is classified as a 'C2' Combustible Liquid for the purpose of storage and handling in accordance with the requirements of AS1940. |
| Container | Store in original packaging as approved by manufacturer. Store in clean tight containers to prevent moisture pickup from air. Can be stored in aluminum, stainless steel, fiberglass or resin lined steel vessels.                                                                                                                                                                                                                                                                                                                                              |

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                       | Glycerin (mist) CAS no: 56-81-5<br>TWA = 10 mg/m <sup>3</sup><br>NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.<br>These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.                                                                          |
| Exposure Limits               | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Biological Limits             | No information available on biological limit values for this product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Engineering Measures          | 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. Adequate ventilation should be provided so that exposure limits are not exceeded. Mechanical ventilation may be necessary if working at elevated temperatures or in enclosed areas.                                                                                                                                                                                                       |
| Personal Protection Equipment | RESPIRATOR: None required for ambient temperature, although an appropriate approved air-purifying respirator should be used if a mist, vapour or dust is generated. An approved self-contained breathing apparatus or air-supplied respirator is recommended if the concentration exceeds the capacity of cartridge respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres (AS1715/1716).<br>EYES: None required, although eye protection is recommended as part of good industrial hygiene (AS1336/1337).<br>HANDS: None required with normal use (AS2161).<br>CLOTHING: Normal work clothing and safety footwear (AS3765/2210). |
| Work Hygienic Practices       | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                         |                                                      |
|-------------------------|------------------------------------------------------|
| Physical State          | Liquid                                               |
| Appearance              | Clear Liquid                                         |
| Odour                   | Bland                                                |
| Colour                  | Water white                                          |
| pH                      | No Data Available                                    |
| Vapour Pressure         | <= 0.008 mm Hg / 2.1 e-005 IPa (@ No Data Available) |
| Relative Vapour Density | No Data Available                                    |
| Boiling Point           | 290°C                                                |
| Melting Point           | 18°C                                                 |
| Freezing Point          | No Data Available                                    |
| Solubility              | 100%                                                 |
| Specific Gravity        | 1.26                                                 |

|                                                                |                      |
|----------------------------------------------------------------|----------------------|
| Flash Point                                                    | 180 °C               |
| Auto Ignition Temp                                             | No Data Available    |
| Evaporation Rate                                               | No Data Available    |
| Bulk Density                                                   | No Data Available    |
| Corrosion Rate                                                 | No Data Available    |
| Decomposition Temperature                                      | No Data Available    |
| Density                                                        | No Data Available    |
| Specific Heat                                                  | No Data Available    |
| Molecular Weight                                               | No Data Available    |
| Net Propellant Weight                                          | No Data Available    |
| Octanol Water Coefficient                                      | No Data Available    |
| Particle Size                                                  | No Data Available    |
| Partition Coefficient                                          | No Data Available    |
| Saturated Vapour Concentration                                 | No Data Available    |
| Vapour Temperature                                             | No Data Available    |
| Viscosity                                                      |                      |
| Volatile Percent                                               | No Data Available    |
| VOC Volume                                                     | No Data Available    |
| Additional Characteristics                                     | No Data Available    |
| Potential for Dust Explosion                                   | Product is a liquid. |
| Fast or Intensely Burning Characteristics                      | No Data Available    |
| Flame Propagation or Burning Rate of Solid Materials           | No Data Available    |
| Non-Flammables That Could Contribute Unusual Hazards to a Fire | No Data Available    |
| Properties That May Initiate or Contribute to Fire Intensity   | No Data Available    |
| Reactions That Release Gases or Vapours                        | No Data Available    |
| Release of Invisible Flammable Vapours and Gases               | No Data Available    |

## 10. STABILITY AND REACTIVITY

|                                  |                                                                                                                                                                                                                                         |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Information              | Combustible liquid.<br>Physical/Chemical Hazards: Contact of glycerine with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate, or Potassium Permanganate may cause an explosion. |
| Chemical Stability               | Product is stable under normal conditions of use, storage and temperature.                                                                                                                                                              |
| Conditions to Avoid              | None identified.                                                                                                                                                                                                                        |
| Materials to Avoid               | Contact of glycerine with strong oxidizing agents such as Nitric Acid or other strong acids, Chromium Trioxide, Potassium Chlorate, or Potassium Permanganate may cause an explosion.                                                   |
| Hazardous Decomposition Products | Irritants. Toxic gas. Thermal decomposition may release acrolein.                                                                                                                                                                       |
| Hazardous Polymerisation         | Hazardous Polymerization will not occur.                                                                                                                                                                                                |

## 11. TOXICOLOGICAL INFORMATION

|                     |                                                                                                                                |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------|
| General Information | TOXICITY DATA:<br>LD50 oral, rat >2000 mg/Kg<br>IRRITATION DATA<br>Skin, rabbit: Not irritating<br>Eye, rabbit: Not irritating |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------|

|                     |                                                                                               |
|---------------------|-----------------------------------------------------------------------------------------------|
| Eyelrritant         | Accidental exposure to the eyes will cause only a mild but transient irritation.              |
| Ingestion           | Unlikely to be harmful unless excessive amount.                                               |
| Inhalation          | Not applicable at ambient temperature. Glycerine mist may be irritative to respiratory tract. |
| SkinIrritant        | Unlikely to be irritant. Heated product may cause thermal burns if contacted.                 |
| Carcinogen Category | No Data Available                                                                             |

## 12. ECOLOGICAL INFORMATION

|                           |                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ecotoxicity               | 1,2,3PROPANETRIOL (56815):<br>LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 51000 - 57000 mg/l 96.00 hours<br>Ecotoxicity: Components of this product have been identified as having potential environmental concerns.<br>Environmental effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. |
| Persistence/Degradability | Product is biodegradable. Even though this product is readily biodegradable, it must not be indiscriminately discarded into the environment.                                                                                                                                                                                                                 |
| Mobility                  | Not established.                                                                                                                                                                                                                                                                                                                                             |
| Environmental Fate        | No Data Available                                                                                                                                                                                                                                                                                                                                            |
| Bioaccumulation Potential | Not established.                                                                                                                                                                                                                                                                                                                                             |
| Environmental Impact      | No Data Available                                                                                                                                                                                                                                                                                                                                            |

## 13. DISPOSAL CONSIDERATIONS

|                                   |                                                                                                                                                                                        |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Information               | Dispose of in accordance with all local regulations. All empty packaging should be disposed of in accordance with Local Regulations or recycled/reconditioned at an approved facility. |
| Special Precautions for Land Fill | Contact a specialist disposal company or the local waste regulator for advice.                                                                                                         |

## 14. TRANSPORT INFORMATION

### Land Transport

|                      |                   |
|----------------------|-------------------|
| Proper Shipping Name | GLYCERINE         |
| Class                | No Data Available |
| Subsidiary Risk(s)   | No Data Available |
| UN Number            | No Data Available |
| Hazchem              | No Data Available |
| Pack Group           | No Data Available |
| Special Provision    | No Data Available |

### Sea Transport

#### IMDG

|                      |                   |
|----------------------|-------------------|
| Proper Shipping Name | GLYCERINE         |
| Class                | No Data Available |
| Subsidiary Risk(s)   | No Data Available |
| UN Number            | No Data Available |
| Hazchem              | No Data Available |
| Pack Group           | No Data Available |
| Special Provision    | No Data Available |
| EMS                  | No Data Available |
| Marine Pollutant     | No                |

## Air Transport IATA

|                      |                   |
|----------------------|-------------------|
| Proper Shipping Name | GLYCERINE         |
| Class                | No Data Available |
| Subsidiary Risk(s)   | No Data Available |
| UN Number            | No Data Available |
| Hazchem              | No Data Available |
| Pack Group           | No Data Available |
| Special Provision    | No Data Available |

## 15. OTHER INFORMATION

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Revision   | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Key/Legend | <p>&lt; Less Than<br/>&gt; Greater Than<br/>atm Atmosphere<br/>CAS Chemical Abstracts Service (Registry Number)<br/>cm Square Centimetres<br/>CO<sub>2</sub> Carbon Dioxide<br/>COD Chemical Oxygen Demand<br/>Degrees Celcius<br/>Degrees Farenheit<br/>g Grams<br/>g/cm Grams per Cubic Centimetre<br/>g/l Grams per Litre<br/>HSNO Hazardous Substance and New Organism<br/>IDLH Immediately Dangerous to Life and Health<br/>immiscible Liquids are insoluable in each other.<br/>inHg Inch of Mercury<br/>inH<sub>2</sub>O Inch of Water<br/>K Kelvin<br/>kg Kilogram<br/>kg/m Kilograms per Cubic Metre<br/>lb Pound<br/>LC<sub>50</sub> LC stands for lethal concentration. LC<sub>50</sub> is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.<br/>LD<sub>50</sub> LD stands for Lethal Dose. LD<sub>50</sub> is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.<br/>ltr or L Litre<br/>m Cubic Metre<br/>mbar Millibar<br/>mg Milligram<br/>mg/24H Milligrams per 24 Hours<br/>mg/kg Milligrams per Kilogram<br/>mg/m Milligrams per Cubic Metre<br/>Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.<br/>mm Millimetre<br/>mmH<sub>2</sub>O Millimetres of Water<br/>mPa.s Millipascals per Second<br/>N/A Not Applicable<br/>NIOSH National Institute for Occupational Safety and Health<br/>NOHSC National Occupational Health and Safety Commission<br/>OECD Organisation for Economic Co-operation and Development<br/>Oz Ounce<br/>PEL Permissible Exposure Limit<br/>Pa Pascal<br/>ppb Parts per Billion<br/>ppm Parts per Million<br/>ppm/2h Parts per Million per 2 Hours<br/>ppm/6h Parts per Million per 6 Hours<br/>psi Pounds per Square Inch<br/>R Rankine<br/>RCP Reciprocal Calculation Procedure<br/>STEL Short Term Exposure Limit<br/>TLV Threshold Limit Value<br/>tne Tonne<br/>TWA Time Weighted Average<br/>ug/24H Micrograms per 24 Hours<br/>UN United Nations<br/>wt Weight</p> |