**MATERIAL SAFETY DATA SHEET**

**GLYCERIN MSDS**

### Section 1: Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin</td>
<td>PT.DUA KUDA INDONESIA</td>
</tr>
<tr>
<td>Catalog codes: SLG 1171, SLG1894, SLG1111, SLG1615</td>
<td>JL. MADIUN BLOK C2.11-C2.13</td>
</tr>
<tr>
<td>CAS#: 56-81-5</td>
<td>UNIT USAHA KAWASAN MARUNDA</td>
</tr>
<tr>
<td>RTECS: MA8050000</td>
<td>JAKARTA-UTARA 14120</td>
</tr>
<tr>
<td>TSCA 8 (b) inventory: Glycerin</td>
<td>PHONE : +62-21-44852388</td>
</tr>
<tr>
<td>CI#: Not Available</td>
<td></td>
</tr>
<tr>
<td>Synonym: 1,2,3 – Propanetriol; Glycerol</td>
<td></td>
</tr>
<tr>
<td>Chemical Name: Glycerin</td>
<td></td>
</tr>
<tr>
<td>Chemical Formula: C3H5 (OH)3</td>
<td></td>
</tr>
</tbody>
</table>

### Section 2: Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>%by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin</td>
<td>56-81-5</td>
<td>100</td>
</tr>
</tbody>
</table>

**Toxocological Data on Ingredients**: Glycerin: ORAL (LD50): Acute: 12600mg/kg (Rat). 4090 mg/kg (Mouse). DERMAL (LD50): Acute: 10000 mg/kg (Rabbit). MIST (LC50): Acute: &gt; 570 mg/m a hours (Rat)

### Section 3: Hazards Identification

**Potential Acute Health Effects**: Slightly hazardous in case of skin contact (irritant,permeator), of eye contact (irritant), of ingestion, of inhalation.

**Potential Chronic Health Effects**:  

**CARCINOGENIC EFFECTS**: Not available. MUTAGENIC EFFECTS:Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys. Repeated or prolonged exposure to the substance can produce target organs damage.
**Section 4 : First Aid Measures**

**Eye Contact:**
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

**Skin Contact:**
Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used. Serious Skin Contact: Not available

**Inhalation:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. Serious Inhalation: Not available.

**Ingestion:**
Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available

**Section 5 : Fire and Explosion Data**

**Flammability of the Product:** May be combustible at high temperature

**Auto-Ignition Temperature:**

**Flash Points:**

**Flammable Limits:** LOWER: 0.9%

**Products of Combustion:** These products are products are carbon oxides (CO,CO2), irritating and toxic fumes.
Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of open flames and sparks, of heat, of oxidizing materials. Non-flammable in presence of shocks.

Explosion Hazards in presence of various substances:

Fire Fighting Media and Instructions:
SMALL FIRE: Use Dry chemical powder. LARGE FIRE: use water spray, fog or foam. Do not use water jet.

Special Remarks on fire Hazards: Not available.

Special Remarks on Explosion Hazards:
Glycerin is incompatible with strong oxidizers such as chromium trioxide, potassium chlorate, or potassium permanganate and may explode on contact with these compounds. Explosive glyceryl nitrate is formed from a mixture of glycerin and nitric and sulfuric acids. Perchloric acid, lead oxide + glycerin form perchloric esters which may be explosive. Glycerin and chlorine may explode if heated and confined.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Stop leak if without risk. If the product is in its solid form: use a hovel to put the material into a convenient waste disposal container. If the product is in its liquid form: do not get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basement or confined areas; dike if needed. Elimination all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
# Section 7: Handling and Storage

**Precautions:**
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

**Storage:**
Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic

# Section 8: Exposure Controls/ Personal Protection

**Engineering Controls:**
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection:**
Safety glasses. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in case of a Large Spill:**
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:**
TWA: 10 (mg/m³) from ACGIH (TLV) (United States) (1999) Inhalation Total. TWA: 10 STEL: 20 (mg/m³) (Canada) TWA: 10 STEL: 20 (mg/m³) (Canada) TWA: 5 (mg/m³) from OSHA (PEL) (United States) Inhalation Respirable. Consult local authorities for acceptable exposure limits.
### Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state and appearance</strong></td>
<td>Liquid (viscous (Syrupy) liquid)</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Mild</td>
</tr>
<tr>
<td><strong>Taste</strong></td>
<td>Sweet</td>
</tr>
<tr>
<td><strong>Molecular Weight</strong></td>
<td>92.09 g/mole</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Clear Colorless</td>
</tr>
<tr>
<td><strong>PH (1% soln/water)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Boiling Point</strong></td>
<td>290°C (554°F)</td>
</tr>
<tr>
<td><strong>Melting Point</strong></td>
<td>19°C (66.2°F)</td>
</tr>
<tr>
<td><strong>Critical Temperature</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Specific Gravity</strong></td>
<td>1.2636 (water = 1)</td>
</tr>
<tr>
<td><strong>Vapor Pressure</strong></td>
<td>0 kPa (@20°C)</td>
</tr>
<tr>
<td><strong>Vapor Density</strong></td>
<td>3.17 (Air=1)</td>
</tr>
<tr>
<td><strong>Volutility</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Water/Oil DistCoeff</strong></td>
<td>The product is more soluble in water; log (oil/water)=-1.8</td>
</tr>
<tr>
<td><strong>Ionicity (in water)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Dispersion Properties</strong></td>
<td>See solubility in water, acetone</td>
</tr>
</tbody>
</table>
### Section 10: Stability and Reactivity Data

**Stability**: The product is stable

**Instability Temperature**: Not Available

**Conditions of Instability**: avoid contact with incompatible materials, excess heat and ignition, sources, moisture.

**Incompatibility with various substances**: Highly reactive with oxidizing agents

**Corrosivity**: non-corrosive in presence of glass

**Special Remarks on Reactivity**: Hygroscopic. Glycerin is incompatible with strong oxiders such as chromium trioxide, potassium chlorate, or potassium permanganate. Glycerin may react violently with acetic anhydride, aniline and nitrobenzene, chromic oxide, lead oxide and fluorine, phosphorous trioxide, ethylene oxide and heat, silver prechlorate, sodium peroxide, sodium hydride.

**Special Remarks on Corrosivity**: Not available

**Polymerization**: will not occur

### Section 11: Toxicological Information

**Routes of Entry**: Absorbed through skin. Eye contact

**Toxicity to Animals**: WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LC50): 4090 mg/kg (Mouse). Acute dermal toxicity of the mist (LC50): > 570 mg/m3 1 hours (Rat).

**Chronic Effects on Humans**: May cause damage to the following organs: kidneys

**Other Toxic Effects on Humans**: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals**:
TDL (rat) —Route: Oral; dose: 100 mg/kg 1 day prior to mating. TDL (human) — Route: Oral; Dose: 1428 mg/kg

**Special Remarks on other Toxic Effects on Humans**: Acute Potensial Health Effects: Low hazards for normal industrial or normal workplace conditions. Skin: May cause skin irritation. May be absorbed through skin eyes: may cause eye irritation with stinging redness, burning sensation, and tearing, but no eye injury. Ingestion: low hazards. Low toxicity except with very large doses. When large doses are ingested , it can cause gastrointestinal tract irritation with thirst (dehydration),nausea or vomiting diarrhea. It may also affect behavior/central nervous system/hervous system (central nervous system depression, general anesthetic, headache,dizziness, confusion, insomnia, toxic psychosis, muscle weakness, paralysisconvulsions), urinary system/kidneys ( renal failure,hemoglobinuria),
Cardiovascular system (cardiac arrhythmias), liver. It may also cause elevated blood sugar.
Inhalation: due to low vapor pressure, inhalation of the vapors at room temperature is unlikely.
Inhalation of mist may cause respiratory tract irritation. Chronic potential health effects: ingestion: prolonged or repeated ingestion may affect the blood (hemolysis, changes in white blood cell count), endocrine system (change in adrenal weight), respiratory system, and may cause kidney injury.

Section 12: Ecological Information

**Ecotoxicity**: Ecotoxicity in water (LC50): 58.5 ppm 96 hours (Trout)

**BOD5 and COD**: Not Available

**Products of Biodegradation**: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the products of Biodegradation**: The products of degradation products are less toxic than the product itself.

**Special Remarks on the products of Biodegradation**: not available

Section 13: Disposal Considerations

**Waste Disposal**: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

**DOT Classification**: Not a DOT controlled material (United States).

**Identification**: Not applicable

**Special Provisions for Transport**: Not applicable
### Federal and state Regulations:
- Illinois toxic substances disclosure to employee act: Glycerin
- Rhode Island RTK: Glycerin
- Pennsylvania RTK: Glycerin
- Minnesota RTK: Glycerin
- Massachusetts RTK: Glycerin
- Tennessee Hazardous Right to know: Glycerin
- TSCA 8(B) Inventory: Glycerin

### Other Regulations:
- EINECS: This product is on the European inventory of existing Commercial Chemical Substances.

### Other Classifications:
- **WHMIS (Canada):** Not controlled under WHMIS (Canada).
- **DSCL (EEC):** Not available S24/25 Avoid contact with skin and eyes.

**HMIS (U.S.A):**
- Health Hazards: 1
- Fire Hazards: 1
- Reactivity: 0
- Personal Protection: g

**National Fire Protection Association (U.S.A):**
- Health: 1
- Flammability: 1
- Reactivity: 0
- Specific hazards:

### Protective Equipment:
- Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.