3-Mercaptopropionic Acid MSDS

1. Product Name and Identification

Product Name: 3-Mercaptopropionic Acid

CAS Number: 107-96-0

Synonyms: 3-Thiopropionic Acid, Propanoic acid, 3-mercapto-

Recommended Use: Industrial applications, synthesis of chemical intermediates, or related laboratory research.

Restrictions on Use: Not for use in food, drug, or cosmetic applications.

2. Composition/Ingredients

Chemical Name: 3-Mercaptopropionic Acid

Molecular Formula: C3H6O2S

Molecular Weight: 106.14 g/mol

Concentration: 100% (pure substance)

3. Hazards Identification

Classification of the Substance:

- **Health Hazards:**
  - Corrosive to skin and eyes
  - Can cause severe irritation or burns upon contact
  - Harmful if swallowed or inhaled

GHS Signal Word: Danger

Hazard Statements:

- H314: Causes severe skin burns and eye damage
- H302: Harmful if swallowed
- H335: May cause respiratory irritation

Precautionary Statements:

- P264: Wash hands thoroughly after handling
- P280: Wear protective gloves, clothing, and eye/face protection
- P301 + P330 + P331: If swallowed, rinse mouth. Do NOT induce vomiting
- P305 + P351 + P338: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do

4. First Aid Measures

- **Eyes:** Immediately flush with plenty of water for at least 15 minutes. Seek medical attention immediately.
- **Skin:** Rinse affected area with water and remove contaminated clothing. Wash thoroughly with soap and water. Consult a doctor if irritation persists.
- **Inhalation:** Move to fresh air. Consult medical attention if respiratory symptoms develop.
- **Ingestion:** Do NOT induce vomiting. Rinse mouth with water. Seek immediate medical advice.

5. Handling and Storage

Handling:

- Use in well-ventilated areas.
- Avoid direct contact with skin, eyes, or clothing.
- Do not breathe vapors or mists.

Storage:

- Store in tightly sealed containers in a cool, dry, and well-ventilated area.
- Keep away from incompatible materials such as strong oxidizing or reducing agents.
- Protect containers from physical damage.

6. Exposure Controls/Personal Protection

Exposure Limits: No established occupational exposure limits.

Engineering Controls: Utilize local exhaust ventilation to maintain exposure levels within safe limits.

Personal Protective Equipment (PPE):

- **Eye/Face Protection:** Chemical safety goggles or face shield.
- **Skin Protection:** Wear chemical-resistant gloves and protective clothing.
- **Respiratory Protection:** Use a NIOSH-approved respirator when exposure limits are exceeded, or in confined areas where ventilation is insufficient.

7. Physical and Chemical Properties

Appearance: Clear to slightly yellow liquid

Odor: Unpleasant, characteristic sulfur odor

Odor Threshold: Not available

pH: Not available

Boiling Point: ~212 °C (414 °F)

Melting Point: ~-16 °C (3.2 °F)

Flash Point: ~118 °C (244 °F)

Solubility: Soluble in water

Density: Approximately 1.21 g/cm³ at 20 °C

Vapor Pressure: Low

Refractive Index: ~1.50

8. Stability and Reactivity

Reactivity: Reactive with strong acids, bases, and oxidizing agents.

Stability: Stable under recommended storage conditions.

Hazardous Reactions: Can release toxic or corrosive fumes if heated.

Conditions to Avoid: High temperatures, open flames, and incompatible materials.

Decomposition Products: Sulfur oxides (SOx), carbon oxides (COx).

9. Toxicological Information

Acute Toxicity:

- **Oral (LD50):** ~73 mg/kg (rat)
- **Dermal (LD50):** Not available
- **Inhalation (LC50):** Not available

Health Effects:

- Causes severe skin and eye damage.
- May cause irritation to respiratory tract upon inhalation.
- Harmful if swallowed; may lead to systemic toxicity.

Chronic Exposure: Prolonged exposure may result in skin sensitization or other chronic health issues.

10. Disposal Considerations

Waste Treatment Methods:

- Dispose of in accordance with all local, regional, and national regulations.
- Do not release into the environment or public drainage systems.
- Consult a licensed waste disposal contractor for handling hazardous waste.

Disclaimer: The data presented in this document are provided for informational purposes only and should not substitute professional advice. Handle and dispose of this chemical responsibly.