Thiourea MSDS

1. Product Name and Identification

- **Product Name**: Thiourea
- **Chemical Formula**: CH4N2S
- **CAS Number**: 62-56-6
- **Synonyms**: Thiocarbamide, Sulfourea
- **Product Use**: Intermediate in chemical synthesis, photographic fixing agent, corrosion inhibitor
- **Manufacturer Information**:
  - Company Name: [Insert Manufacturer's Name Here]
  - Address: [Insert Address Here]
  - Emergency Contact Number: [Insert Contact Number Here]

2. Composition/Ingredients

- **Chemical Name**: Thiourea
- **Concentration**: ≥ 99% (by weight)
- **Hazardous Components**:
  - No additional hazardous impurities or additives are present.

3. Hazards Identification

- **GHS Classification**:
  - Hazard Category:
    - Acute Toxicity - Oral (Category 4)
    - Carcinogenicity (Category 2)
  - Hazard Statements:
    - H302 - Harmful if swallowed.
    - H351 - Suspected of causing cancer.
- **Label Elements**:
  - Signal Word: Warning
  - Precautionary Statements:
    - P201 - Obtain special instructions before use.
    - P264 - Wash hands thoroughly after handling.
    - P301 + P312 - If swallowed, seek medical attention if you feel unwell.
- **Other Hazards**:
  - May cause skin and eye irritation on prolonged or repeated exposure.

4. First Aid Measures

- **General Information**:

    - Seek immediate medical attention in cases of concern. Show this MSDS to medical professionals when seeking treatment.
- **Eye Contact**:
    - Rinse eyes with plenty of water for at least 15 minutes. If irritation persists, consult an ophthalmologist.
- **Skin Contact**:
    - Wash affected area with soap and water. Remove contaminated clothing. Consult a doctor if irritation continues.
- **Inhalation**:
    - Move the person to fresh air. If breathing is difficult, provide oxygen or artificial respiration. Seek medical attention immediately.
- **Ingestion**:
    - Do not induce vomiting. Rinse mouth with water and drink plenty of water. Call poison control or seek medical assistance without delay.

5. Handling and Storage

- **Handling Instructions**:
    - Avoid creating or inhaling dust.
    - Wear proper protective equipment.
    - Wash hands and skin thoroughly after handling.
- **Storage Requirements**:
    - Store in a tightly closed container in a cool, dry, and well-ventilated area.
    - Keep away from heat, sparks, and incompatible substances such as strong oxidizers.

6. Exposure Controls/Personal Protection

- **Engineering Controls**:
    - Provide adequate ventilation, particularly in confined areas. Use localized exhaust fans if needed.
- **Personal Protective Equipment (PPE)**:
    - **Eye Protection**:
        - Safety goggles that are chemical-resistant.
    - **Skin Protection**:
        - Wear gloves and long-sleeved clothing to prevent skin contact.
    - **Respiratory Protection**:
        - Use a properly fitted particulate respirator if exposure levels may exceed standards.
    - **Hygiene Practices**:
        - Avoid eating, drinking, or smoking while handling this material.

7. Physical and Chemical Properties

- **Appearance**: White crystalline solid

- **Odor**: Odorless
- **Boiling Point**: Decomposes before boiling
- **Melting Point**: 170-182°C
- **Solubility**: Soluble in water, alcohols, and polar organic solvents
- **Density**: ~1.41 g/cm^3
- **pH**: Neutral to slightly acidic in aqueous solution
- **Vapor Pressure**: Negligible
- **Flash Point**: Not applicable

8. Stability and Reactivity

- **Chemical Stability**:
  - Stable under normal storage and handling conditions.
- **Conditions to Avoid**:
  - High temperatures, open flame, and humid environments.
- **Materials to Avoid**:
  - Strong oxidizing agents or acids.
- **Hazardous Decomposition Products**:
  - Sulfur oxides, carbon oxides, and nitrogen oxides may be released under combustion or decomposition.

9. Toxicological Information

- **Acute Toxicity**:
  - Oral (LD50): ~125 mg/kg (rat)
- **Irritation**:
  - Prolonged or repeated exposure may cause skin and eye irritation.
- **Chronic Effects**:
  - Long-term exposure may have adverse effects on thyroid function.
- **Carcinogenicity**:
  - Classified as a possible human carcinogen (IARC Group 2B).
- **Sensitization**:
  - No evidence suggests sensitization under normal handling conditions.

10. Disposal Considerations

- **Waste Disposal Instructions**:
  - Dispose of the material and its container in accordance with local, state, and federal regulations.
  - Do not dispose of the product in natural waterways to prevent contamination.
- **Empty Containers**:
  - Treat empty containers as hazardous waste unless thoroughly cleaned and recycled appropriately.