Aniline MSDS

1. Product Name and Identification

Product Name: Aniline

Chemical Formula: $C_6H_5NH_2$

CAS Number: 62-53-3

Manufacturer/Supplier: [Insert Manufacturer Name]

Emergency Contact: [Insert Contact Phone Number]

2. Composition/Ingredients

Chemical Name: Aniline

Percent Composition: 100%

Synonyms: Aminobenzene, Phenylamine

Molecular Weight: 93.13 g/mol

3. Hazards Identification

Classification

- **Health Hazards:** Toxic if inhaled, swallowed, or absorbed through skin.
- **Environmental Hazards:** Harmful to aquatic organisms.
- **Physical Hazards:** Combustible liquid under certain conditions.

Label Elements

- **Signal Word:** Danger
- **Hazard Statements:**
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    - H301+H311+H331: Toxic if swallowed, in contact with skin, or if inhaled.
    - H412: Harmful to aquatic life with long-lasting effects.

- **Precautionary Statements:**
    - P260: Do not breathe dust, fumes, gas, mist, vapors, or spray.
    - P280: Wear protective gloves, clothing, and eye protection.

Potential Health Effects

- **Eyes:** May cause irritation or damage.
- **Skin:** May result in irritation, absorption of toxic amounts.
- **Respiratory System:** Harmful if inhaled; may lead to dizziness, cyanosis, or respiratory distress.

4. First Aid Measures

General Advice: Seek immediate medical attention in all cases of exposure.

- **Eye Contact:** Rinse cautiously with water for several minutes. If irritation persists, seek medical advice.
- **Skin Contact:** Remove contaminated clothing and wash skin thoroughly with soap and water.
- **Inhalation:** Move the individual to fresh air. If breathing is difficult, provide oxygen. If breathing stops, perform CPR.
- **Ingestion:** Do not induce vomiting. Rinse mouth and seek medical attention promptly.

5. Handling and Storage

Handling:

- Ensure good ventilation at the workplace.
- Avoid contact with skin, eyes, and clothing.
- Do not inhale vapors or mist.

Storage:

- Store in a cool, dry, and well-ventilated area.
- Keep away from heat, sparks, and open flames.

- Keep container tightly closed and protect from sunlight.

6. Exposure Controls/Personal Protection

Exposure Limits:

- OSHA Permissible Exposure Limit (PEL): 5 ppm (skin).
- ACGIH Threshold Limit Value (TLV): 2 ppm TWA.

Engineering Controls:

- Use appropriate ventilation systems to keep levels below PEL.

Personal Protective Equipment (PPE):

- **Eye Protection:** Safety goggles.
- **Skin Protection:** Chemical-resistant gloves and long-sleeved clothing.
- **Respiratory Protection:** Use NIOSH-approved respirators when ventilation is insufficient.

7. Physical and Chemical Properties

- **Appearance:** Colorless to pale yellow liquid
- **Odor:** Aromatic/ammonia-like odor
- **Boiling Point:** 184°C (363°F)
- **Melting Point:** -6°C (21°F)
- **Flash Point:** 70°C (158°F) (closed cup)
- **Solubility in Water:** Slightly soluble
- **Density:** 1.02 g/cm³

8. Stability and Reactivity

Stability: Stable under normal storage and handling conditions.

Reactivity: Reacts with strong oxidizing agents, acids, and chlorinating agents.

Hazardous Decomposition Products: Upon decomposition, emits toxic fumes such as nitrogen oxides and carbon oxides.

Conditions to Avoid: Heat, sparks, and open flames.

9. Toxicological Information

- **Acute Toxicity:**
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  - Oral LD50 (rat): ~250 mg/kg
  - Dermal LD50 (rabbit): ~820 mg/kg
- **Chronic Effects:** Prolonged exposure may cause methemoglobinemia, resulting in cyanosis and reduced oxygen transport.
- **Irritation:** May cause skin and eye irritation.

10. Disposal Considerations

Dispose of Aniline in accordance with local, regional, and national regulations. Consult a licensed waste disposal contractor. Do not dump into drains, water systems, or onto the ground.

Container Disposal: Rinse thoroughly before recycling or disposing. Ensure all residues are removed.
