# Methenamine MSDS

## Product Name and Identification

**Product Name**: Methenamine
**Chemical Formula**: C6H12N4
**CAS Number**: 100-97-0
**Intended Use**: Utilized in the production of resins, explosives, and as a fuel tablet in industrial and domestic applications.

## Composition/Ingredients

**Chemical Composition**:

- **Substance Name**: Methenamine (Hexamethylenetetramine)
- **Purity**: ≥ 99%
- **Hazardous Components**: None identified under standard conditions; decomposition may generate harmful byproducts.

## Hazards Identification

**Emergency Overview**:

- **Physical Hazards**:
  - Flammable solid.
  - May form explosive dust-air mixtures.
- **Health Hazards**:
  - May irritate respiratory tract, eyes, and skin.
  - Harmful if swallowed in significant amounts.
- **Environmental Hazards**:
  - Avoid release into water bodies to prevent environmental impact.

**Precautionary Statements**:

- Keep away from heat, sparks, and open flames.
- Avoid inhaling dust.
- Use necessary protective equipment to minimize exposure risks.

## First Aid Measures

**Eye Contact**:

- Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and safe to do so. Seek medical attention if irritation persists.

**Skin Contact**:

- Wash affected areas with soap and water. Remove contaminated clothing and rinse thoroughly. Consult a physician if irritation continues.

**Inhalation**:

- Move to a location with fresh air. If symptoms such as breathing difficulty occur, seek medical assistance.

**Ingestion**:

- Rinse the mouth with water. Do not induce vomiting unless instructed by medical personnel. Seek immediate medical advice.

# Handling and Storage

**Handling**:

- Avoid creating or inhaling dust. Handle in a ventilated area.
- Keep product away from sources of heat, sparks, and open flames.
- Wash hands and exposed skin areas after handling.

**Storage**:

- Store in a cool, dry, well-ventilated area.
- Keep in a tightly closed container, away from oxidizers and strong acids.

# Exposure Controls/Personal Protection

**Exposure Limits**:

- No established occupational exposure limits for Methenamine, but minimize unnecessary exposure.

**Engineering Controls**:

- Use effective ventilation, such as exhaust systems, to reduce airborne dust.

**Personal Protective Equipment (PPE)**:

- **Eye Protection**: Safety goggles or face shield.

- **Skin Protection**: Chemical-resistant gloves and protective clothing.
- **Respiratory Protection**: Use a dust mask or an approved respirator in areas with dust generation.

# Physical and Chemical Properties

- **Appearance**: White crystalline powder
- **Odor**: Slightly ammonia-like
- **Melting Point**: 280°C (sublimes without melting)
- **Boiling Point**: Not applicable (sublimation occurs)
- **Flash Point**: 250°C (closed cup)
- **Solubility**: Soluble in water and organic solvents
- **Vapor Pressure**: Negligible under normal conditions

# Stability and Reactivity

**Chemical Stability**:

- Stable under recommended usage and storage conditions.

**Reactivity**:

- Reacts with strong acids, producing formaldehyde.

**Conditions to Avoid**:

- Excessive heat, flames, and ignition sources.

**Hazardous Decomposition Products**:

- May release formaldehyde and ammonia upon decomposition or exposure to heat.

# Toxicological Information

- **Acute Toxicity**:
  - May cause mild irritation to skin and mucous membranes.
  - LD50 (oral, rat): Approximately 920 mg/kg.
- **Skin/Eye Irritation**:
  - May result in mild irritation upon prolonged or repeated exposure.
- **Chronic Effects**:
  - Repeated or excessive exposure may cause respiratory sensitization in susceptible individuals.

# Disposal Considerations

- Dispose of in accordance with local, regional, and national regulations.
- Do not discard into waterways or drains.
- Contaminated packaging should also be disposed of according to relevant protocols.

**Note**: This document is created based on current knowledge and best practices. Always verify pertinent regulations and standards to ensure compliance.