

# Carbohydrazide MSDS

## 1. Product Name and Identification

**Product Name:** [Carbohydrazide](#)

**Synonyms:** Carbonic dihydrazide, 1,3-Diaminourea

**Chemical Formula:** CH<sub>6</sub>N<sub>4</sub>O

**Molecular Weight:** 90.09 g/mol

**CAS Number:** 497-18-7

**Intended Use:** Oxygen scavenger in boiler water treatment, chemical intermediate, corrosion inhibitor

## 2. Composition/Ingredients

| Substance                 | CAS Number | Proportion (%) |
|---------------------------|------------|----------------|
| Carbohydrazide            | 497-18-7   | ≥98%           |
| Impurities (trace levels) | ---        | ≤2%            |

## 3. Hazards Identification

### Classification:

- Classified as hazardous under GHS guidelines.
- Harmful if ingested. May cause irritation to skin, eyes, and respiratory tract.

### Potential Hazards:

- **Health Hazards:** Irritating to skin, eyes, and respiratory system. Harmful if swallowed.
- **Environmental Hazards:** May cause adverse effects to aquatic ecosystems in large quantities if improperly handled.

### GHS Label Elements:

- **Pictogram:**
  - △ (Warning)
- **Signal Word:** Warning
- **Hazard Statements:**
  - H302 - Harmful if swallowed.
  - H315 - Causes skin irritation.
  - H319 - Causes serious eye irritation.
  - H335 - May cause respiratory irritation.
- **Precautionary Statements:**
  - Wear protective clothing and gloves.

- Use in a well-ventilated area.
- Avoid inhalation of dust.

## 4. First Aid Measures

### **Skin Contact:**

Wash thoroughly with soap and water. Remove contaminated clothing. If irritation develops, seek medical advice.

### **Eye Contact:**

Rinse eyes cautiously with water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing and consult a doctor if irritation persists.

### **Inhalation:**

Move the affected person to fresh air. If symptoms such as respiratory discomfort persist, seek immediate medical attention.

### **Ingestion:**

Rinse mouth with water. Do not induce vomiting. Seek medical advice immediately if ingestion occurs.

## 5. Handling and Storage

### **Handling:**

- Handle with care to prevent dust generation.
- Use appropriate personal protective equipment (PPE).
- Avoid direct contact with eyes, skin, and clothing.

### **Storage:**

- Store in a cool, dry, well-ventilated area away from incompatible materials.
- Keep containers tightly closed when not in use.
- Avoid exposure to moisture and high temperatures.

## 6. Exposure Controls/Personal Protection

### **Engineering Controls:**

Maintain adequate ventilation during use. Use local exhaust systems to keep airborne concentrations low.

### **Personal Protection Equipment (PPE):**

- **Eye Protection:** Safety goggles or face shield.
- **Skin Protection:** Wear chemical-resistant gloves and protective clothing.

- **Respiratory Protection:** Use a dust mask or respirator if handling in poorly ventilated areas.

**Exposure Limits:**

No specific exposure limits established, but minimize dust exposure to avoid irritation.

## 7. Physical and Chemical Properties

| Property           | Value                       |
|--------------------|-----------------------------|
| Form               | Crystalline powder          |
| Color              | White                       |
| Odor               | Odorless                    |
| pH (1% solution)   | 7-9                         |
| Melting Point      | 150°C (decomposes)          |
| Boiling Point      | Not applicable (decomposes) |
| Solubility (Water) | Soluble                     |
| Specific Gravity   | ~1.35                       |
| Flash Point        | Non-flammable               |

## 8. Stability and Reactivity

**Stability:** Stable under recommended storage conditions.

**Conditions to Avoid:**

- High temperatures
- Prolonged exposure to moisture
- Contact with strong oxidizing agents

**Materials to Avoid:** Strong acids, oxidizing agents, and reducing agents.

**Decomposition Products:**

Decomposition releases nitrogen oxides, ammonia, and carbon dioxide.

## 9. Toxicological Information

**Routes of Exposure:** Skin contact, eye contact, inhalation, ingestion.

**Toxic Effects:**

- Harmful if swallowed, leading to nausea or abdominal discomfort.
- Causes irritation to skin and eyes.

- Repeated inhalation may lead to respiratory discomfort or irritation.

**Chronic Effects:**

- Prolonged exposure may cause damage to the liver or kidneys with high doses.

**LD50 Data:**

- Oral (rat): ~3,300 mg/kg

## **10. Disposal Considerations**

Dispose of in accordance with all applicable regulations. Small quantities can be diluted and neutralized prior to disposal. Avoid releasing into the environment or drainage systems.

For larger amounts, contact an accredited waste disposal service. Proper precautions must be taken to mitigate environmental damage during disposal.

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