## SECTION I NAME

### Product
- Urea

### Chemical Synonyms
- Carbamide; Carbonyldiamide

### Formula
- \( \text{NH}_2\text{COCONH}_2 \)

### Unit Size
- up to 2.5 Kg

### C.A.S. No.
- 57-13-6

## SECTION II INGREDIENTS OF MIXTURES

### Principal Component(s)
- % by Volume
- TLV Units

### Urea
- 100%
- None established.

## SECTION III PHYSICAL DATA

### Melting Point (°C)
- 132°C (270°F)

### Boiling Point (°F)
- Decomposes

### Vapor Pressure (mm Hg)
- 1.2105 @ 25°C

### Appearance & Odor
- White crystals or prills; ammonia-like odor.

### Evaporation Rate
- N/A

### Specific Gravity (H₂O = 1)
- 1.335

### Solubility in Water
- Soluble

### FLAMMABILITY

<table>
<thead>
<tr>
<th>Flash Point (Method Used)</th>
<th>Flammable Limits in Air</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-flammable.</td>
<td>% by Volume N/A</td>
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</table>

### Extinguisher Media
- Water spray; carbon dioxide; dry chemical.

## SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## UNUSUAL FIRE AND EXPLOSION HAZARDS

Not considered to be a fire or explosion hazard. When heated, it emits highly toxic and irritating fumes of ammonia gas; can react with oxidizing materials.

## SECTION V HEALTH HAZARD DATA

### Threshold Limited Value
- None established (ACGIH 2001).

### Toxicity Data
- Oral-route LD₅₀ 14300 mg/kg.
- Intravenous-rabbit LD₅₀: 4800 mg/kg.

### Effects of Overexposure
- Causes eye and skin irritation. Causes digestive and respiratory tract irritation. May cause cardiac disturbances. May cause blood abnormalities. Causes gastrointestinal irritation with nausea, vomiting and diarrhea. Inhalation of dust causes irritation of the nose and throat, coughing and sneezing. Target organs: Blood, cardiovascular system.

### Emergency and First Aid Procedures
- **INGESTION:** Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person. **EYES:** Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention. **SKIN:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

### Conditions to Avoid
- Strong oxidizing agents, sodium hypochlorite, sodium nitrate, calcium hypochlorite, nitrosyl perchlorate, gallium perchlorate, diphosphorus pentachloride.

### Incompatibility (Materials to Avoid)
- Strong oxidizing materials.

### Hazardous Decomposition Products
- Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide, ammonia, cyanuric acid, oxides of nitrogen.

### Hazardous Polymerization
- Conditions to Avoid
- Strong oxidizing agents.
- May Occur: No
- Will Not Occur: Yes
- Not applicable.

### Waste Disposal Method
- Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only. Uncontaminated material may be disposed of in a sanitary landfill or contract with a licensed waste disposal service.

### Special Protection Information
- None should be needed in normal laboratory handling. If dusty conditions prevail, wear a NIOSH/MSHA-approved dust mask.

### Ventilation
- Local Exhaust: Recommended
- Mechanical (General): Recommended

### Protective Gloves
- Rubber
- Eye Protection: Chemical safety glasses.

### Other Protective Equipment
- Lab coat, eye wash station, ventilation hood, safety goggles.

### Special Precautions
- Store in a cool, dry place away from strong oxidizing materials and fire hazards. Wash thoroughly after handling.

### Other Precautions
- Use in a laboratory hood. Not for drug, food or household use. Keep out of reach of children.

## SECTION IX SPECIAL PRECAUTIONS

### Precautions to be Taken in Handling & Storing
- Keep container tightly closed when not in use.

### Waste Disposal
- Liquid: Kegs; drums. Kegs should be equipped with protective disks. Drums should be equipped with protective rings. Package and transport in approved containers.
- Solid: Inert; dry.

### Health and Safety Information
- Information provided herein is for the protection of personnel who may be exposed to the material(s) described. It is not intended to cover all possible situations or materials to which this material may be exposed. This material is furnished in good faith, but no warranty or representation, either express or implied, is made as to the correctness of the same or the completeness of any information contained herein. This material is not a substitute for medical care. Employers should use this information as a supplement to other information gathered by other means.

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**MSDS No.:** UU0030

**Effective Date:** January 1, 2007

**CHEMTREC Day:** 800-424-9300

**CHEMTREC After Hours:** 585-226-6177

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**Chemical Safety Coordinator:** James A. Bertsch

**JAB:**

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**D.O.T.:** Non-Regulated.