

**AERCHEM INC.**  
**320 N. Walnut St.**  
**Bloomington, IN 47404**

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**Effective Date:** 6/1/97  
**Product Name:** Urea  
**Chemical Formula:** CO(NH<sub>2</sub>)<sub>2</sub>  
**Cas No.:** 57-13-6

**Haz**

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**Hazardous Ingredients:**  
NOT APPLICABLE

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**Physical Data:**

Melting point (range) Approx.: 271°F (133°C)  
Boiling point: N/A  
Specific Gravity (Water=1): 1.335  
pH (depends on quality): 7-10 (10% aqueous solution)  
Solubility in water: soluble - 119g/100g @ 68°F  
Odor & Physical Form: white solid, spherical or granular shape with slight ammonia odor  
Vapor pressure: N/A  
Tap density : N/A

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**Fire and Explosion Information:**

Flash point: NONE  
(Auto) Ignition temperature: NONE  
Extinguishing media to be recommended: WATER. All standard agents are acceptable. Use one that is suitable for surrounding fire. Material itself burns with difficulty.  
to be avoided: NONE

Special fire and explosions precautions: Heating above 270°F decomposes to biuret, ammonia, and nitrogen oxides. Short term exposure to smoke and gases may lead to irreversible lung injury without early signs and symptoms. Note: Feed grade does not contain biuret  
Fire and explosions hazards: N/A

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**Reactivity Data:**      **Stable**   XX        **Unstable**           

**Hazardous Decomposition:** Ammonia, Cyanuric Acid, Biuret, Nitrogen Oxides, Carbon Oxides  
**Hazardous Polymerization:** WILL NOT OCCUR

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**Incompatibilities (Materials to avoid):**

Strong oxidizers, acids or bases, nitrates. Reacts with sodium or calcium hypochlorite to form explosive nitrogen tetrachloride

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**Handling and Storage Information:**

Keep dry and away from nitrates and alkali's. Store in closed containers in cool, dry, isolated, well ventilated area away from heat, sources of ignition, and incompatibles. Avoid contamination with other "look alike" materials that may produce a fire or explosion

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**Leak/Spill Information:**

Sweep up, wash down with water. If uncontaminated, recover and reuse as product.

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**Disposal Information:**

Dispose of in accordance with federal, state and local ordinances. Prevent large quantities from contacting vegetation or waterways and animals

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**Health Hazard Information:**

**A. Exposure/Health Effects**

Total nuisance dust: 15mg/m<sup>3</sup>  
Permitted exposure limit: 5mg/m<sup>3</sup>  
Responsible TLV: 10mg/m<sup>3</sup>

Exposure may lead to irritation of respiratory tract and eyes; reddening, itching, and inflammation of skin; and may cause nausea, vomiting, and diarrhea when ingested.

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**B. ROUTES OF ENTRY:**

**Inhalation:** YES  
**Ingestion:** YES  
**Skin Contact:** YES  
**Eye Contact:** YES

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**C. Toxicity Data**

Since urea is a fertilizer, it may promote eutrophication in waterways- low order aquatic toxicity

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**Occupational Control Measures:**

**Ventilation Systems:** Provide local or general ventilation to keep nuisance dust limit of 15mg/m<sup>3</sup>. MECHANICAL (GENERAL) RESPIRATOR RECOMMENDED  
**Skin Protection:** RUBBER GLOVES  
**Eye Protection:** safety glasses or Chemical goggles; don't wear contacts when working with substance  
**Special Protection:** eye wash station, protective clothing

**First Aid:**

**Eyes:** Promptly flush with water, continuing for 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. If irritation persists, consult a physician immediately  
**Skin:** Wash area with soap and water. For contact with molten product, do not remove clothing, flush skin with cold water. Launder clothing before reuse.  
**Inhalation:** Remove affected person from source of exposure. If not breathing, ensure open airway and initiate CPR. If breathing is difficult, administer oxygen if available. Get medical attention.  
**Ingestion:** Do not induce vomiting. Keep affected person warm and treat for shock. Get medical attention. As single dose of 100 g has reportedly caused mild symptoms of central nervous system depression (drowsiness, etc)