

Material Safety Data Sheet

Urea (Technical Grade)

PRODUCT IDENTIFICATION

Trade Name: Urea, Urea Technical
Chemical Family: Urea, Carbimide, Carboylidiamide, Carbonic Acid, Aliphatic amide (Aliphatic)

Formula: CO(NH₂)₂

Molecular Weight: 60.07

CAS #: 57-13-6

HAZARDOUS INGREDIENTS

HMS Ratings: Health: 0

PHYSICAL DATA

Boiling Point: N/A

Melting Point: 271°F (133°C)

Specific Gravity: N/A

Vapor Density: N/A

% Volatiles by Weight

Solubility in water: 119mg/100mg @ 68°F

Physical States:

Appearance and Odor: White solid, spherical or granular shape, or powder, slight ammonia odor.

FIRE AND EXPLOSION HAZARDS DATA

Flash Point (Method Used): N/A

Auto ignition Temperature: N/A

Flammable Limits:

Upper: N/A **Lower:** N/A

Extinguishing Media: water, water fog, CO₂, dry chemical, foam

Special Fire Fighting Procedures: none known

Unusual Fire and Explosion Hazards: Non-explosive in presence of open flames and sparks, of shocks, of heat, of oxidizing materials, of combustible materials, of organic materials, of metals, of acids, of alkalis, of moisture. May explode when mixed with certain strong reducing substances (hypochlorites).

HEALTH HAZARD INFORMATION

Routes of Entry:

Inhalation: X **Skin:** X **Ingestion:** X

This product may irritate eyes and skin upon contact. Not considered to be toxic for humans. However, in keeping with good industrial hygiene practices, exposure to any chemical should be kept to a minimum.

CARCINOGENIC EFFECTS: NONE by ACGIH, EPA, IARC, OSHA. **MUTAGENIC EFFECTS:** NONE by ACGIH, EPA, IARC, OSHA.

TERATOGENIC EFFECTS: NONE by ACGIH, EPA, IARC, OSHA. The substance is not toxic to blood, kidneys, lungs, the nervous system, the reproductive system, liver, mucous membranes. There is no known effect from chronic exposure to this product. Urea is approved as a food and cosmetic additive, is an ingredient in clinical preparations, and is a normal human metabolite found in urine.

REACTIVITY DATA

Stability: Stable

Incompatibility (Material to Avoid)

Hazardous Decomposition Products:

Decomposers to ammonia, biuret, nitrogen oxides, carbon oxides

Hazardous Polymerization: will not occur

SPILL OR LEAK PROCEDURES

Steps to Be Taken in Case Material Is Released or Spilled: Prevent additional

discharge of material, if possible to do so without hazard. Prevent spills from entering sewers, watercourses, wells, etc. Product will promote algae growth and may degrade water quality and taste. Notify downstream water users.

Waste Disposal Method: All disposals must comply with Federal, State, and Local Regulations, Bury, dissolve in water and neutralize.

Hazard Label Information: none

Precautions to Be Taken in Handling and Storage: If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Keep out of reach of children.

SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type): normally none needed

Ventilation: Use with adequate ventilation.

Local Exhaust: X **Mechanical:** X

Other: Wear a NIOSH approved dust respirator if engineering, work practice or other control measures are not adequate to prevent overexposure. Where skin and eye contact may occur as a result of prolonged or repeated exposures, wear long sleeved clothing, coveralls, leather gloves, and safety glasses with side shields.

SPECIAL PRECAUTIONS

Keep container closed: Keep away from sparks and open flames. Keep material from direct sunlight.

Very low toxicity for humans or animals. Will slowly release ammonia and degrade to nitrate. Ammonia is a toxin hazard to fish. However, ammonia release is slow making urea much less toxic than ammonium salts. Aquatic toxicity tests indicate 24 Hr exposure at 16,000 mg/L of urea did not kill Creek Chubs. Urea ingestion may be toxic to mammals and birds at body burdens of several thousands of mg/kg.

TRANSPORTATION

Not regulated by the US DOT

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