

InstaKool™ Material Safety Data Sheet

Urea

Issued December 2003

For Emergency Call: CHEMTREC – (800) 424-9300

Section 1. Material Identification

Distributor:	Yara Canada L.P 1130 Sherbrooke Street, West Suite 1050, Montreal, Quebec H3A2M8 Tel: (514) 849-9222 Fax: (514) 849-3362
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Product Name: Urea, dry

CAS No.: 57-13-6

24 Hour Emergency Telephone (Canutec): 613-996-6666

CHEMTREC (800) 424-9300

Section 2. Composition / Information on Ingredients

Synonyms and Common Trade Names: Urea Prills, Urea Granular, Carbamide, Carbonyldiamine, Carbonyl Diamide

Component Name	Typical Weight Percentage
Urea: (NH ² CONH ²)	97.5 - 99.7
Biuret: (NH ² CONHCONH ²)	1% approx
Free Ammonia	<200ppm
Nuisance dust	15mg/m ³ (Total)
5mg/m ³	Respirable (particulate) fraction urea

Section 3. Physical Data

Appearance/Color/Odor: White solid, spherical or granular shape with slight ammonia odor.			
Melting Point/Range:	271°F or 133°C	Boiling Point:	135°C (decomposes)
Solubility in Water:	1,193 g/l at 25°C	Boiling Point:	Not applicable
Specific Gravity:	Not applicable	Vapor Pressure (mmHg):	80 Pa t 20°C (calculated)
Vapor Density:	Not applicable	Molecular Weight:	60.07
Bulk Density:	44 - 49lbs/cu ft	% Volatiles:	Not applicable
pH:	7.2 at 100 g/l	Evaporation Rate:	Not applicable
Viscosity:	Not applicable	Density:	750 kg/m ³

Section 4. Fire or Explosion Hazard

Flash Point: Not applicable

Auto-ignition Temperature: Not available

Lower Explosive Limit: Not available

Upper Explosive Limit: Not available

Unusual Fire and Explosion Hazards: Heating above 270°F decomposes to Biuret, Ammonia and Nitrogen Oxides. Short term exposures to smoke and gases may lead to irreversible lung injury without early signs and symptoms.

Extinguishing Media: All standard agents are acceptable. Use extinguishing agent suitable for the surrounding fire. Material itself burns with difficulty. Urea becomes slippery when wet. Guard against slips and falls.

Special Fire Fighting Procedures and Equipment: Irritating toxic substances may be emitted upon thermal decomposition. Exposed firefighters should wear NIOSH approved self contained breathing apparatus with full face piece and full face piece and full protective clothing. May form explosive mixtures if mixed with strong acid (Nitric/Perchloric).

Ventilation: Provide local or general ventilation to keep below nuisance dust limit of 15 mg/m³.

Section 5. Reactivity Data

Stability:	This product is stable under normal ambient conditions of temperature and pressure.
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	May slowly hydrolyze to ammonium carbamate after a long period of time which decomposes to ammonia and carbon dioxide.
Materials to Avoid (Incompatibilities):	Avoid contact with strong oxidizers, acids or bases. Avoid contact with Nitrates. Reacts to sodium or calcium hypochloride to form explosive nitrogen trichloride.
Hazardous Decomposition Products:	Decomposes to ammonia, biuret, nitrogen oxides and carbon oxides.

Section 6. Toxicological Properties

Significant Routes of Exposure: Eyes, digestive tract, respiratory tract, skin

Potential Acute Health Effects

Inhalation:	May cause respiratory tract irritation although no incidents of dust inhalation health effects have been reported.
Ingestion:	May cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting and diarrhea.
Skin Contact:	Contact may cause irritation or rash, particularly with moist skin.
Eye Contact:	Severe irritant. Contact with heated material may cause thermal burn
Chronic Exposure:	No information found.

Potential Chronic Health Effects: None known. Urea is a naturally occurring chemical in the body. It is an end product of protein metabolism and is excreted in the urine.

Toxicity to Animals:

Acute Oral Toxicity

(rat) LD50 = 14,300 - 15,000 mg/kg

(mouse) LD50 = 11,500 mg/kg

(cattle) LD50 = 510 mg/kg

Repeated Dose (rat): 24 weeks dermal - NOAEL = 40% in ointment

Skin Irritation/Corrosion: Mouse - not irritating (10% solution)

Eye Irritation/Corrosion: Rabbit - not irritating (50% solution)

Not found to be toxic by oral exposure as defined by OSHA. Based on toxicity data for another compound, i.e. ammonium nitrate, not expected to be toxic by dermal and inhalation exposure as defined by OSHA.

Other Effects on Humans: Despite extensive medical use, no significant side effects on humans have been noted.

Section 7. Preventive Measures

Exposure Controls/Personal Protection

Engineering Controls: Provide local or general ventilation to keep below nuisance dust limit of 15mg/m³.

Personal Protection

Eye Protection:	Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance. Have eye wash facility available where eye contact could occur.
Protective Clothing:	Wear impervious gloves and protective clothing to prevent skin contact.
Respiratory Protection:	Normally none needed. Use NIOSH approved equipment when airborne dust exposure limits are exceeded. NIOSH approved breathing equipment must be available for non-routine and emergency use.
Other Protective Clothing or Equipment:	Normally not require.

Accidental Release Measures

Small Spill: If uncontaminated recover and reuse as product

Large Spill: Prevent large quantities from contacting vegetation or waterways. Keep animals away from large spills.

Release Notes: If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. **If in the U.S. contact the U.S. Coast Guard National Response Center, toll free number 800-424-8802. In case of accident or road spill notify: Chemtrec in U.S.A. 800-424-9300, Canutec in Canada t 613-996-6666. Chemtrec in other countries at (International Code) + 703-527-3887**

Handling and Storage

Ventilation:	Provide local or general ventilation to keep below nuisance dust limit of 15 mg/m ³ .
Handling	Avoid contact with eyes. Avoid repeated or prolonged contact with skin or clothing. Avoid dust inhalation. Contact lenses should not be worn.
Storage:	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 product a fire or explosion.
Special Precautions/Procedures/Label Instructions:	Avoid containers, piping or fittings made of brass, bronze or other copper bearing alloys or galvanized metals.

Disposal Considerations

Product Disposal: Disposal of Urea may be subject to federal, state or local regulations.

General Comments: Users of this product should review their operations in terms of applicable federal, state and local laws and regulations, then consult with appropriate regulatory agencies before discharging or disposing of waste material.

Section 8. First Aid Measures

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. A single dose of 100 grams has reportedly caused mild symptoms of the Central Nervous System (depression, drowsiness, etc).
Skin Contact:	Wash area of contact thoroughly with soap and water. For contact with molten product do not remove clothing. Flush skin immediately with cold water. Launder clothing before reuse.
Eye Contact:	Promptly flush with water, continuing for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. If irritation persists, consult a physician immediately

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