Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**WARNING: EXPLOSIVE AND FLAMMABLE WHEN HEATED. Avoid heat, friction, and contact with heavy metals. Maintain water content of at least 20% to minimize explosive potential. Irritating to skin, eyes, and the respiratory system.**	

Section I. Chemical Product and Company Identification

Chemical Name: **Urea Nitrate (wetted with ca. 25% Water)**

Catalog Number	U0015
Synonym	Acidogen Nitrate
Chemical Formula	$NH_2CONH_2 \cdot HNO_3$
CAS Number	124-47-0

Supplier: TCI America, 9211 N. Harborgate St., Portland OR, 1-800-423-8616

In case of Emergency Call: **Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)**

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Urea Nitrate (wetted with ca. 25% Water)	124-47-0	Min. 98.0 (T)	Not available.	Not available.

Section III. Hazards Identification

Acute Health Effects

Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Chronic Health Effects

CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
Toxicity to the reproductive system: Not available.
There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Section IV. First Aid Measures

Eye Contact

Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.

Skin Contact

If the chemical gets spilled on a clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.

Inhalation

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. Seek medical attention. Treat symptomatically and supportively.

Ingestion

Remove dentures if any. Watch for an obstruction in the victim's mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victim's teeth. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

Section V. Fire and Explosion Data

Flammability	Flammable and potentially explosive.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.

Combustion Products

These products are toxic carbon oxides (CO, CO_2), nitrogen oxides (NO, NO_2).

Fire Hazards

A violent reaction with reducing materials may occur. Exposure to heavy metals (i.e lead, iron) can catalyze a rapid thermal decomposition of this compound. **Do not allow this material to dry out. Maintain at least 20% water content to minimize explosive potential.**

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Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: High. Risks of explosion of the product in presence of static discharge: High. **This product has a tendency to explode, especially when rubbed or heated. It is also a strong oxidizing agent and may cause a violent reaction with reducing materials. Exposure to heavy metals (i.e lead, iron) can catalyze a rapid thermal decomposition of this compound. <u>If Urea nitrate is dried (water content below 20%), this material is then classified as a Class A Explosive (UN0220) that is extremely dangerous. Do not heat or mechanically shock.</u>**
Fire Fighting Media and Instructions	Flammable solid. SMALL FIRE: Use DRY chemicals, CO_2, water spray or foam. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Flammable solid with explosive potential. Stop leak if without risk. DO NOT touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Runoff to sewer may create a fire or explosion hazard. Eliminate all sources of ignition. Excercise extreme care in working with this compound. Use non-sparking tools and avoid mechanical shock. Call for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	FLAMMABLE. EXPLOSIVE. IRRITANT. **This product has a tendency to explode, especially when rubbed or heated. It is also a strong oxidizing agent and may cause a violent reaction with reducing materials. Exposure to heavy metals (i.e lead, iron) can catalyze a rapid thermal decomposition of this compound. <u>If Urea nitrate is dried (water content below 20%), this material is then classified as a Class A Explosive (UN0220) that is extremely dangerous. Do not heat or mechanically shock.</u>** Store away from heat and sources of ignition. Mechanical exhaust required. Avoid heat, sources of ignition and light. Store in an explosive-proof freezer or refrigerator. Keep in a plastic overpack if possible. DO NOT ingest. DO NOT breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Always store away from incompatible compounds such as oxidizing agents, reducing agents, and heavy metals.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Colorless to white crystalline powder. (as dry product)	Solubility	Soluble in hot water, methanol. Very slightly soluble in cold water. Insoluble in diethyl ether.
Specific Gravity	1.69 (water=1)		
Molecular Weight	123.07	Partition Coefficient	Not available.
Boiling Point	Not available.	Vapor Pressure	Not available.
Melting Point	Decomposes @ 152°C (305.6°F)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Odorless.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light. This product has a tendency to explode, especially when rubbed or heated. It is also a strong oxidizing agent and may cause a violent reaction with reducing materials. Exposure to heavy metals (i.e lead, iron) can catalyze a rapid thermal decomposition of this compound. If Urea nitrate is dried (water content below 20%), this material is then classified as a Class A Explosive (UN0220) that is extremely dangerous. Do not heat or mechanically shock.
Incompatibilities	Extremely reactive or incompatible with reducing agents and heavy metals. Reactive with oxidizing agents.

Continued on Next Page ***Emergency phone number (800) 424-9300***

Section XI. Toxicological Information

RTECS Number	YT9675000
Routes of Exposure	Eye contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	Not available.
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Not available. **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Not available. Toxicity to the reproductive system: Not available. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
Acute Toxic Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Not available.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of this substance.

Section XIV. Transport Information

DOT Classification	DOT CLASS 4.1: Flammable solid.
PIN Number	UN1357
Proper Shipping Name	Urea nitrate, wetted
Packing Group (PG)	I
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This product is **NOT** on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list: (i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec. (ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on an MSDS sheet.
WHMIS Classification (Canada)	WHMIS CLASS B-4: Flammable solid. WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).
EINECS Number (EEC)	Not available.
EEC Risk Statements	R11- Highly flammable. R36/38- Irritating to eyes and skin.
Japanese Regulatory Data	Not available.

Section XVI. Other Information

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Notice to Reader

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