TECHNICAL DATA SHEET

Urea - Organic Nitrogen Technical Grade

Revised: 08/11/2026

PRODUCT IDENTIFICATION

Product Name: Urea - Organic Nitrogen Technical Grade
CAS Number: 57-13-6
Molecular Formula: CH_4N_2O
Molecular Weight: 60.056 g/mol
Grade: Technical Grade
Purity / Concentration: 40%
Synonyms: Carbamide, Carbonyl diamide

PRODUCT OVERVIEW

Urea (CAS 57-13-6) is a high-purity technical grade nitrogen source available as white crystalline pellets. With an assay of 98.96% and minimal moisture content of 0.15%, this compound is a versatile building block for agricultural, industrial, and biochemical applications.

Grade Significance: Technical Grade indicates that this product is manufactured to meet rigorous industrial standards, providing a high-purity profile suitable for professional manufacturing and synthesis without the cost of higher-priced analytical reagents.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay	%	98.96	98	100.5	Titration/Gravimetric
Moisture	%	0.15	—	0.5	Per specification
Iron	ppm	0.4	—	5	ICP
Biuret	%	0.45	—	1	Per specification

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	White crystalline pellets	**Odor**	Odorless
Form	Pellets	**Boiling Point**	Decomposes (NTP, 1992)
Melting / Freezing Point	275 °F (NTP, 1992)	**Flash Point**	>200°C
Specific Gravity	1.32	**Solubility**	High water solubility, moderate alcohol solubility
Molecular Formula	CH_4N_2O	**Molecular Weight**	60.056 g/mol
Vapor Pressure (20°C)	0.0001 mmHg	**Viscosity (25°C)**	1.0
Refractive Index (20°C)	1.468	**Density (25°C)**	1.335 g/mL

APPLICATIONS

1. **Agriculture** — It acts as a primary nitrogen source in fertilizer formulations to promote healthy plant growth and soil enrichment.
2. **Animal Nutrition** — Used as a non-protein nitrogen supplement in feed to support the nutritional requirements of ruminant livestock.
3. **Chemical Manufacturing** — Serves as a critical precursor for the synthesis of various resins, plastics, and industrial chemical intermediates.
4. **Pharmaceuticals** — Utilized as a raw material in the production of specialized pharmaceutical compounds and medicinal formulations.
5. **Biotechnology** — Applied in microbial culture media and biochemical assays as a consistent and reliable nitrogen donor.

STORAGE & HANDLING

Proper storage in a cool, dry, and well-ventilated area is essential to prevent moisture absorption, which can cause caking and degradation of the pellets. While Urea is not classified as a hazardous substance, maintaining a controlled environment ensures the chemical integrity and performance of your formulations.

- Store in a cool, dry place away from moisture and incompatible materials.
- Use containers made of HDPE or glass to prevent chemical interactions.
- Avoid exposure to high temperatures and direct sunlight to maintain product integrity.
- Ensure proper ventilation when handling to minimize inhalation risks.
- Wear appropriate personal protective equipment (PPE) such as gloves and safety goggles.

AVAILABLE PACKAGING

- 5 Lbs.
- 50 Lbs.

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Warning

No GHS pictograms assigned.

Hazard Statements:

- Not Classified
- Reported as not meeting GHS hazard criteria by 4430 of 4611 companies (only 3.9% companies provided GHS information). For more detailed information, please visit ECHA C&L website.

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com