

### PRODUCT IDENTIFICATION



**Product Name:** Urea - Organic Nitrogen  
**CAS Number:** 57-13-6  
**Molecular Formula:**  $\text{CH}_4\text{N}_2\text{O}$   
**Molecular Weight:** 60.056 g/mol  
**Grade:** Technical  
**Purity / Concentration:** 40%  
**Synonyms:** Carbamide, Carbonyl diamide

### PRODUCT OVERVIEW

Urea, chemically known as carbonyl diamide, is a colorless, crystalline organic compound with the formula  $\text{CO}(\text{NH}_2)_2$ . It is a key nitrogen source in fertilizers and plays a vital role in the nitrogen cycle, making it essential for agricultural applications.

### 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

|                                 |                                 |                         |                                                    |
|---------------------------------|---------------------------------|-------------------------|----------------------------------------------------|
| <b>Appearance</b>               | White crystalline pellets       | <b>Odor</b>             | Odorless                                           |
| <b>Form</b>                     | Pellets                         | <b>Boiling Point</b>    | Decomposes (NTP, 1992)                             |
| <b>Melting / Freezing Point</b> | 275 °F (NTP, 1992)              | <b>Flash Point</b>      | >200°C                                             |
| <b>Specific Gravity</b>         | 1.32                            | <b>Solubility</b>       | High water solubility, moderate alcohol solubility |
| <b>Molecular Formula</b>        | $\text{CH}_4\text{N}_2\text{O}$ | <b>Molecular Weight</b> | 60.056 g/mol                                       |
| <b>Vapor Pressure (20°C)</b>    | 0.0001 mmHg                     | <b>Viscosity (25°C)</b> | 1.0                                                |
| <b>Refractive Index (20°C)</b>  | 1.468                           | <b>Density (25°C)</b>   | 1.335 g/mL                                         |

### APPLICATIONS

- Agriculture** — Used as a nitrogen source in the formulation of fertilizers to enhance plant growth.
- Animal Nutrition** — Incorporated into animal feed to provide a non-protein nitrogen source.
- Chemical Manufacturing** — Serves as a precursor in the synthesis of various chemicals and pharmaceuticals.
- Research Laboratory** — Utilized in biochemical assays and as a nitrogen source in microbial culture media.
- Industrial** — Used in the production of urea-formaldehyde resins for adhesives and coatings.

## STORAGE & HANDLING

- 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.*

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