

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Urea (Carbamide)
- English Name: Urea; Carbamide
- CAS Number:57-13-6
- Formula:CH₄N₂O
- Molecular Weight:60.06 g/mol
- Product Characteristics: White crystalline powder with no obvious odor. High-purity amide compound with excellent solubility and reactivity. Non-toxic, non-flammable, and highly soluble in water. Suitable for agriculture, chemical synthesis, pharmaceuticals, and daily use.

2. Technical Specifications

Item	Specification
Appearance	White crystalline powder
Purity (HPLC)	≥ 99.5%
Melting Point	132-135°C
Water Content	≤ 0.5%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Iron (Fe)	≤ 1 ppm
Non-Volatile Residue	≤ 0.05%
pH Value (10% aqueous solution, 25°C)	6.0-7.5
Solubility (25°C)	108 g/100 mL water
Biodegradability	Fully biodegradable

3. Product Advantages

1. High Purity: Meets industrial/agricultural standards with low impurity content.
2. Excellent Solubility: Rapidly dissolves in water, suitable for aqueous systems.
3. Versatile Reactivity: Ideal for condensation, hydrolysis, and complexation reactions.
4. Low Toxicity: Safe for humans, animals, and the environment.

4. Application Fields

- Agriculture: Nitrogen fertilizer for crops (promotes growth and yield).
- Chemical Synthesis: Precursor for urea-formaldehyde resins, melamine, and pharmaceuticals.
- Pharmaceutical: Excipient (osmotic diuretic) and drug synthesis intermediate.
- Daily Use: Humectant in cosmetics, skin care products, and hair care formulations.
- Laboratory Research: Analytical reagent and buffer component.

5. Usage Methods

- Dosage: Adjust according to application (0.5-100% concentration).

- Application: Dissolve in water before use; avoid contact with strong acids/bases at high temperature.
- Optimal Conditions: Operate in well-ventilated areas; store in dry environment.

6. Packaging & Storage

- Packaging: 1kg/5kg HDPE bags, 25kg woven bags, 50kg steel drums (UN-approved).
- Storage: Cool, dry, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); sealed, away from heat/moisture.
- Shelf Life: 24 months (unopened, specified conditions).
- Transportation: Non-hazardous; transport by ordinary vehicles.

7. Safety & Protection

- Non-toxic and non-flammable; avoid dust inhalation and prolonged skin contact.
- Wear dust mask and safety glasses during large-scale handling.
- In case of eye contact, rinse with plenty of water for 5-10 minutes.

8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Each batch comes with a COA for compliance verification.
- Provide technical support for application optimization and formulation design.