

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Cyanamide
- English Name: Cyanamide; Carbodiimide
- CAS Number:420-04-2
- Formula:CH₂N₂
- Molecular Weight:42.04 g/mol
- Product Characteristics: Colorless to pale yellow clear liquid with a pungent odor. High-purity amide with strong reactivity. Toxic, flammable, and soluble in water/organic solvents. Suitable for chemical synthesis, agriculture, and pharmaceutical intermediates.

2. Technical Specifications

Item	Specification
Appearance	Colorless to pale yellow clear liquid
Purity (GC)	≥ 98.0%
Water Content	≤ 1.0%
Density (20°C)	1.072-1.074 g/cm ³
Boiling Range	140-142°C
Melting Point	45-47°C
Flash Point (Closed Cup)	43°C
Viscosity (20°C)	2.3 mPa·s
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Non-Volatile Residue	≤ 0.05%
Explosive Limits (v/v)	2.2-22.0%
Water Solubility	Fully miscible

3. Product Advantages

1. High Purity: Low impurity content ensures stable reactivity in synthesis.
2. Strong Reactivity: Ideal for condensation, cyclization, and amidation reactions.
3. Versatile Application: Key intermediate for guanidines, pharmaceuticals, and herbicides.
4. Good Solubility: Miscible with water/organics, suitable for multi-component systems.

4. Application Fields

- Chemical Synthesis: Precursor for guanidine derivatives, pharmaceuticals, and dyes.
- Agriculture: Herbicide intermediate, plant growth regulator.
- Laboratory Research: Analytical reagent, reaction intermediate.
- Industrial Processing: Resin crosslinking agent, rubber accelerator.

5. Usage Methods

- Dosage: 10-50% concentration (adjust by application).

- Application: Use in closed systems with corrosion-resistant equipment; avoid contact with oxidizers and acids.
- Optimal Conditions: Operate in well-ventilated areas; avoid ignition sources and high temperature.

6. Packaging & Storage

- Packaging: 5L HDPE cans, 20L HDPE drums, 200L HDPE drums (UN-approved).
- Storage: Cool, dry, well-ventilated warehouse ($\leq 25^{\circ}\text{C}$); sealed, away from heat/sparks/oxidizers.
- Shelf Life: 12 months (unopened, specified conditions).
- Transportation: Classified as flammable and toxic hazardous goods; transport per regulations.

7. Safety & Protection

- Toxic and flammable: No smoking near storage/use areas; prohibit open flames.
- Wear chemical safety goggles, nitrile rubber gloves, and organic vapor respirator.
- Avoid inhalation, skin contact, and ingestion; ensure local exhaust ventilation.

8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Each batch comes with a COA for compliance verification.
- Provide technical support for synthesis optimization and safety operation.