

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Methylamine Solution (40% in Water)
- English Name: Methylamine Solution; Aminomethane Solution
- CAS Number: 74-89-5
- Formula: CH_3NH_2 (Aqueous Solution)
- Molecular Weight: 31.06 g/mol (Pure Substance)
- Product Characteristics: Colorless to pale yellow clear liquid with a strong ammonia-like odor. High-purity aqueous solution of methylamine (40% concentration). Highly corrosive, flammable, and toxic. Chemically reactive, suitable for chemical synthesis and industrial processing.

2. Technical Specifications

Item	Specification
Appearance	Colorless to pale yellow clear liquid
Concentration (GC)	$40.0 \pm 1.0\%$
pH Value (25°C)	12.0-13.0
Water Content	59.0-61.0%
Density (20°C)	0.890-0.895 g/cm ³
Boiling Range	48-52°C
Flash Point (Closed Cup)	-10°C
Viscosity (20°C)	1.1 mPa·s
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Iron (Fe)	≤ 1 ppm
Non-Volatile Residue	≤ 0.05%
Explosive Limits (v/v)	4.9-20.7%
Corrosivity	Highly corrosive to metals

3. Product Advantages

1. Precise Concentration: 40% aqueous solution ensures consistent reactivity.
2. High Purity: Low impurity content meets industrial synthesis standards.
3. Excellent Reactivity: Versatile intermediate for organic synthesis (amination, methylation).
4. Easy Handling: Aqueous formulation reduces volatility compared to pure methylamine.

4. Application Fields

- Chemical Synthesis: Precursor for pharmaceuticals, agrochemicals, dyes, and rubber accelerators.
- Industrial Processing: Rubber vulcanization, textile dyeing, and water treatment.
- Laboratory Research: Analytical reagent and reaction intermediate.
- Pharmaceutical: Intermediate for antihistamines, antibiotics, and other drugs.

5. Usage Methods

- Dosage: 10-50% concentration (dilute with water for low-corrosivity use).
- Application: Use in closed systems with corrosion-resistant equipment; add slowly to reactions to control heat release.
- Optimal Conditions: Operate in well-ventilated areas; avoid ignition sources and acids.

6. Packaging & Storage

- Packaging: 5L HDPE cans, 20L HDPE drums, 200L HDPE drums, 1000L IBC totes (UN-approved).
- Storage: Cool, dry, well-ventilated warehouse ($\leq 25^{\circ}\text{C}$); sealed, away from heat/sparks/oxidizers/acids.
- Shelf Life: 12 months (unopened, specified conditions).
- Transportation: Classified as corrosive and flammable hazardous goods; transport per regulations.

7. Safety & Protection

- Highly corrosive, flammable, and toxic: No smoking near storage/use areas; prohibit open flames.
- Wear chemical safety goggles, face shield, nitrile rubber gloves, and organic vapor respirator.
- Avoid inhalation, skin contact, and contact with acids; ensure local exhaust ventilation.
- In case of exposure, follow first aid measures in MSDS.

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 corrosion control.