

## Technical Data Sheet (TDS)

### 1. Product Overview

- Product Name: Ethylenediamine (EDA)
- English Name: Ethylenediamine; 1,2-Diaminoethane
- CAS Number: 107-15-3
- Formula:  $C_2H_8 N_2$
- Molecular Weight: 60.10 g/mol
- Product Characteristics: Colorless clear liquid with a strong ammonia-like odor. High-purity aliphatic diamine with strong reactivity. Highly corrosive, flammable, and toxic. Miscible with water/organic solvents, suitable for chemical synthesis, chelating agents, and polymer crosslinking.

### 2. Technical Specifications

Item	Specification
Appearance	Colorless to pale yellow clear liquid
Purity (GC)	$\geq 99.0\%$
Water Content	$\leq 0.5\%$
Density (20°C)	0.898-0.900 g/cm <sup>3</sup>
Boiling Range	116-118°C
Flash Point (Closed Cup)	33°C
Viscosity (20°C)	1.6 mPa·s
Heavy Metals (Pb)	$\leq 0.5$ ppm
Heavy Metals (As)	$\leq 0.1$ ppm
Non-Volatile Residue	$\leq 0.05\%$
Explosive Limits (v/v)	5.8-11.1%
Water Solubility	Fully miscible

### 3. Product Advantages

1. High Purity: Low impurity content ensures stable reactivity in synthesis.
2. Strong Chelating Ability: Forms stable complexes with metal ions, ideal for chelating agents.
3. Versatile Reactivity: Used as crosslinker, curing agent, and synthetic intermediate.
4. Good Solubility: Miscible with water/organics, suitable for multi-component systems.

### 4. Application Fields

- Chemical Synthesis: Precursor for pharmaceuticals, dyes, pesticides, and polyamides.
- Polymer Industry: Crosslinker for epoxy resins, curing agent for polyurethanes.
- Chelating Agents: Metal ion sequestration in water treatment and electroplating.
- Laboratory Research: Analytical reagent and reaction intermediate.

### 5. Usage Methods

- Dosage: 5-50% concentration (adjust by application).

- Application: Use in closed systems with corrosion-resistant equipment; add slowly to control exotherm.
- 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 (UN-approved).
- Storage: Cool, dry, well-ventilated warehouse ( $\leq 30^{\circ}\text{C}$ ); sealed, away from heat/sparks/oxidizers/acids.
- Shelf Life: 12 months (unopened, specified conditions).
- Transportation: Classified as flammable and corrosive 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.

## 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.