

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Ethylene
- English Name: Ethylene
- CAS Number: 74-85-1
- Formula: C₂H₄
- Molecular Weight: 28.05 g/mol
- Product Characteristics: Colorless, odorless compressed gas. Highly reactive alkene with excellent polymerization properties. Chemically active, flammable, and non-toxic. Suitable for chemical synthesis, polymer production, and laboratory applications.

2. Technical Specifications

Item	Specification
Physical State	Compressed gas
Purity (GC)	≥ 99.5%
Impurity (Ethane)	≤ 0.3%
Impurity (Methane)	≤ 0.1%
Water Content	≤ 10 ppm
Oxygen Content	≤ 0.05%
Acetylene Content	≤ 0.01%
Boiling Point (1 atm)	-103.7°C
Melting Point	-169.2°C
Density (Gas, 20°C, 1 atm)	1.178 kg/m ³
Flammability	Highly flammable
Explosive Limits (v/v)	2.7-36.0%
Flash Point	-136°C

3. Product Advantages

1. High Purity: Low impurity content ensures high polymerization efficiency.
2. Strong Reactivity: Versatile intermediate for organic synthesis and polymer production.
3. Clean Combustion: Combustion produces minimal pollutants.
4. Reliable Quality: Strict control of harmful impurities (e.g., acetylene) meets industrial standards.

4. Application Fields

- Chemical Synthesis: Precursor for polyethylene, ethylene oxide, and vinyl chloride.
- Polymer Industry: Production of LDPE, HDPE, and EVA resins.
- Laboratory Research: Analytical reagent, polymerization initiator, and reaction gas.
- Agriculture: Fruit ripening agent (controlled use).

5. Usage Methods

- Dosage: Adjust according to application (controlled by mass flow meter).
- Application: Use in closed reaction systems; ensure leak-proof and inert atmosphere.

- Optimal Conditions: Operate at 20-30°C; avoid high pressure and ignition sources.

6. Packaging & Storage

- Packaging Specifications: 40L steel cylinders, 100L steel cylinders, bulk cryogenic tanks.
- Storage Conditions: Store in cool, dry, well-ventilated warehouses (temperature $\leq 30^{\circ}\text{C}$). Keep cylinders upright, secured, and away from heat, sparks, and oxidizers.
- Shelf Life: 24 months (unopened, under specified storage conditions).
- Transportation: Classified as flammable gas; transport per hazardous goods regulations.

7. Safety & Protection

- Highly flammable: No smoking near storage/use areas; prohibit open flames.
- Wear appropriate PPE: Safety glasses, anti-static clothing, and gas leak detectors.
- Avoid gas leakage; use pressure regulators and safety valves.
- In case of leakage, evacuate area, ventilate, and eliminate ignition sources.

8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Each batch is accompanied by a COA for compliance verification.
- Provide technical support for polymerization process optimization and safety operation.