

## Technical Data Sheet (TDS)

### 1. Product Overview

- Product Name: Styrene (Vinylbenzene)
- English Name: Styrene; Vinylbenzene
- CAS Number: 100-42-5
- Formula: C<sub>8</sub> H<sub>8</sub>
- Molecular Weight: 104.15 g/mol
- Product Characteristics: Colorless to pale yellow clear liquid with a sweet aromatic odor. High-purity monomer with excellent polymerization properties. Chemically reactive, flammable, and moderately toxic. Suitable for polymer production and chemical synthesis.

### 2. Technical Specifications

Item	Specification
Appearance	Colorless to pale yellow clear liquid
Purity (GC)	≥ 99.5%
Water Content	≤ 0.05%
Density (20°C)	0.901-0.903 g/cm <sup>3</sup>
Boiling Range	144.0-146.0°C
Flash Point (Closed Cup)	31°C
Viscosity (20°C)	0.76 mPa·s
Non-Volatile Residue	≤ 0.005%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Polymerization Inhibitor (TBC)	50-100 ppm
Explosive Limits (v/v)	1.1-6.1%

### 3. Product Advantages

1. High Purity: Low impurity content ensures high polymerization efficiency and product quality.
2. Strong Polymerization Activity: Ideal for production of polystyrene, ABS, and SBR.
3. Excellent Solvency: Dissolves organic compounds, suitable for coatings and adhesives.
4. Stabilized Formula: Contains polymerization inhibitor to prevent self-polymerization during storage.

### 4. Application Fields

- Polymer Industry: Production of polystyrene (PS), acrylonitrile-butadiene-styrene (ABS), and styrene-butadiene rubber (SBR).
- Chemical Synthesis: Precursor for styrene derivatives and pharmaceutical intermediates.
- Industrial Solvent: Coatings, inks, and adhesives.
- Laboratory Research: Analytical reagent and polymerization monomer.

### 5. Usage Methods

- Dosage: Adjust according to application (50-100% concentration for polymerization).
- Application: Use in closed reaction systems; maintain inert atmosphere to prevent polymerization.
- Optimal Conditions: Operate at 20-30°C; avoid high temperature (> 60°C) and sunlight.

### 6. Packaging & Storage

- Packaging Specifications: 5L HDPE cans, 20L steel drums, 200L steel drums, 1000L IBC totes (UN-approved).
- Storage Conditions: Store in cool, dry, well-ventilated warehouses (temperature ≤ 30°C). Keep sealed, away from heat, sparks, and oxidizing agents. Add fresh inhibitor if stored beyond 6 months.
- Shelf Life: 12 months (unopened, under specified storage conditions).
- Transportation: Classified as flammable hazardous goods; transport per relevant regulations.

### 7. Safety & Protection

- Flammable and moderately toxic: No smoking near storage/use areas; prohibit open flames.
- Wear appropriate PPE: Chemical safety goggles, nitrile rubber gloves, and organic vapor respirator.
- Avoid inhalation and skin contact; ensure local exhaust ventilation.
- In case of exposure, follow first aid measures in MSDS and seek medical attention promptly.

### 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 inhibitor replenishment.