

Technical Data Sheet (TDS)

1. Product Overview

- **Product Name:** Trichloroethylene
- **English Name:** Trichloroethylene
- **CAS Number:** 79-01-6
- **Formula:** C₂HCl₃
- **Molecular Weight:** 131.39 g/mol
- **Product Characteristics:** Colorless clear liquid with mild sweet odor; highly volatile, slightly soluble in water, miscible with most organic solvents. Flammable vapor (explosive mixture with air); excellent solvent power for oils, greases and organic compounds. Industrial grade with 99.8% high purity; low impurity content; suitable for use as industrial solvent, metal degreaser and chemical synthesis intermediate.

2. Technical Specifications

Item	Specification (Industrial Grade)
Appearance	Colorless clear liquid
Assay (C ₂ HCl ₃)	≥ 99.5%
Boiling Point Range	86.0-88.0°C
Specific Gravity (20/20°C)	1.460-1.465
Water Content	≤ 0.05%
Acidity (as HCl)	≤ 0.001%
Residue on Evaporation	≤ 0.001%
Free Chlorine	Negative
Color (APHA)	≤ 10
Refractive Index (20°C)	1.4770-1.4790
Viscosity (20°C)	0.55-0.60 mPa s
Volatility (20°C)	58.8 kPa vapor pressure

3. Product Advantages

1. **High Purity & Purity:** 99.8% ultra-high purity with no free chlorine; low water and acid content; minimal residue on evaporation; ensures high-quality solvent performance.
2. **Excellent Solvent Power:** Strong dissolving capacity for oils, greases, waxes and most organic compounds; ideal metal degreaser and industrial solvent.
3. **Good Physical Properties:** Low viscosity, high volatility and stable boiling point; fast degreasing and rapid evaporation; no residual on treated surfaces.
4. **Stable Quality:** Consistent physical/chemical properties between batches; excellent storage stability (24 months unopened); no degradation under normal storage.
5. **Wide Compatibility:** Miscible with most organic solvents (ethanol, ether, benzene); compatible with standard industrial equipment (metal/HDPE).

4. Application Fields

- **Metal Degreasing:** Industrial degreaser for ferrous/non-ferrous metals (steel, aluminum, copper); removes oil, grease and wax from metal surfaces before plating/painting.
- **Industrial Solvent:** Solvent for resin, rubber, paint and adhesive production; extracts active ingredients from plant/animal materials.
- **Dry Cleaning:** Solvent for dry cleaning of textiles (replace chloroform for better performance); low damage to fabric fibers.
- **Chemical Synthesis:** Intermediate for organic synthesis (e.g., vinyl chloride, trichloroethane); raw material for pharmaceutical and pesticide production.



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- **Electronics Industry:** Precision degreaser for electronic components and circuit boards; high cleaning efficiency with no residual.
- ### 5. Usage Methods
- **Metal Degreasing:** Use undiluted trichloroethylene in a closed degreasing tank; immerse metal parts for 5-15 minutes at room temperature; ultrasonic cleaning available for precision parts; air dry or blow dry with nitrogen (vapor recovery recommended).
 - **Industrial Solvent:** Mix with other organic solvents (ethanol/ether) according to formulation requirements; adjust concentration based on solubility; stir evenly at room temperature.
 - **Dry Cleaning:** Dilute to 80-90% concentration with dry cleaning additives; use in closed dry cleaning machine; distill and recycle after use.
 - **Precision Cleaning (Electronics):** Use purified grade trichloroethylene in a closed cleaning system; spray or immerse electronic components; dry with hot air ($\leq 60^{\circ}\text{C}$); ensure complete vapor recovery.
 - **Key Operation:** All use in closed/well-ventilated system; vapor recovery to reduce emission; no open use to avoid inhalation and environmental pollution.
- ### 6. Packaging & Storage
- **Packaging Specifications:** 1 L glass bottles, 25 L HDPE/metal drums, 200 L metal drums, 1000 L IBC totes (metal inner liner); customized packaging available.
 - **Storage Conditions:** Cool, well-ventilated, explosion-proof warehouse ($0-30^{\circ}\text{C}$); store in sealed metal/HDPE containers; avoid direct sunlight, high temperature and open flame; keep away from oxidizers, acids and metals; separate from food and medicines.
 - **Shelf Life:** 24 months (unopened, specified conditions); 6 months after opening (seal tightly and store in cool place).
 - **Transportation:** UN 1710, Class 6.1 toxic substance; transport in sealed metal/HDPE containers; explosion-proof vehicle for bulk transport; comply with IMDG/IATA/ADR transport regulations; avoid mixing with food/oxidizers/combustibles.
- ### 7. Safety & Protection
- Wear chemical splash goggles, nitrile gloves, chemical protective suit and organic vapor respirator for all handling; use explosion-proof equipment in work area.
 - Operate only in well-ventilated area with local exhaust ventilation; install gas detection alarm system for vapor; no smoking or open flame in work area.
 - Avoid inhalation of vapor and skin/eye contact; prolonged exposure causes liver/kidney damage; regular medical check-up for long-term operators.
 - Contain all spills immediately with inert absorbents; do not flush to sewer; dispose of contaminated materials as hazardous waste.
 - Use closed systems and vapor recovery equipment to minimize emission and environmental pollution.
- ### 8. Quality Assurance
- Manufactured under ISO 9001 (quality) and ISO 14001 (environmental) management systems; strict raw material inspection and production process control.
 - Each batch is tested for purity, physical properties and impurities; accompanied by a Certificate of Analysis (COA) to ensure compliance with industrial standards.
 - Provide technical support for application optimization, solvent recovery and emission control; on-site guidance for large-scale industrial use.
 - Purified grade (99.9%) available for precision cleaning and electronic industry; customized purification according to customer requirements.