

PRODUCT IDENTIFICATION



Product Name: Perchloroethylene ACS Grade

CAS Number: 127-18-4

Molecular Formula: C₂Cl₄

Molecular Weight: 165.8 g/mol

Grade: ACS Grade

Purity / Concentration: Not Available

Synonyms: Tetrachloroethylene, PERC

PRODUCT OVERVIEW

Perchloroethylene ACS Grade is a high-purity, colorless volatile liquid featuring an assay of 99.95% and extremely low impurity levels. It is a highly effective solvent primarily utilized in industrial cleaning, precision degreasing, and chemical synthesis applications.

Grade Significance: ACS Grade signifies that this product meets the rigorous purity standards set by the American Chemical Society, ensuring consistent performance for sensitive laboratory and industrial processes.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

| PARAMETER | UNIT | TYPICAL | MIN | MAX | TEST METHOD |
|--|------|-------------|-------|--------|------------------------|
| Assay (wt%) | % | 99.95 | 99.5 | — | GC-FID |
| Color (APHA) | APHA | 5 | — | 10 | ASTM D1209 |
| Specific Gravity (20°C) | g/mL | 1.622 | 1.621 | 1.623 | USP <841> |
| Residue After Ignition | % | 0.0005 | — | 0.0010 | Gravimetric |
| Water Content | % | 0.0030 | — | 0.0050 | Karl Fischer Titration |
| Heavy Metals (as Pb) | ppm | 0.05 | — | 1 | ICP-OES |
| Iron (Fe) | ppm | 0.02 | — | 0.2 | ICP-OES |
| Chloride (Cl ⁻) | ppm | 0.1 | — | 1 | Ion Chromatography |
| Sulfate (SO ₄ ²⁻) | ppm | 0.2 | — | 1 | Ion Chromatography |
| Acidity | — | Passes Test | — | — | ACS |
| Alkalinity | — | Passes Test | — | — | ACS |
| Free Halogens | — | Passes Test | — | — | ACS |
| Stabilizer Ppm | ppm | 10 | 8 | 12 | GC-FID |

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

| | | | |
|---------------------------------|--|--------------------------------------|--------------------------------|
| Appearance | Colorless, volatile liquid | Odor | Sweet, chloroform-like odor |
| Form | Liquid | Boiling Point | 121°C (249.8°F) |
| Melting / Freezing Point | -22°C (-7.6°F) | Specific Gravity | 1.623 |
| Solubility | Soluble in organic solvents, insoluble in water | Molecular Formula | C ₂ Cl ₄ |
| Molecular Weight | 165.8 g/mol | Vapor Pressure (20°C) | 9.5 mmHg |
| Viscosity (25°C) | 0.89 cP | Refractive Index (20°C) | 1.461 |
| Density (25°C) | 1.622 g/mL | Partition Coefficient (log P) | 2.8 |
| Decomposition Temp. | Not normally decompose at ambient; decomposes at high temps, >200°C under oxidative conditions | | |

APPLICATIONS

- Dry Cleaning** — Widely used as the industry-standard solvent for effectively removing stains and soils from delicate fabrics.
- Automotive Manufacturing** — Utilized for precision cleaning and degreasing of metal parts to ensure surfaces are free of contaminants before assembly or coating.
- Adhesives and Sealants** — Serves as a critical solvent in the formulation of high-performance adhesives and sealants for industrial applications.
- Chemical Synthesis** — Acts as a versatile precursor in the synthesis of various fluorinated compounds and specialty chemical intermediates.

STORAGE & HANDLING

Perchloroethylene must be stored in a cool, well-ventilated area away from direct sunlight to prevent degradation and minimize vapor buildup. Proper containment is essential to mitigate health risks, as the chemical is classified as a suspected carcinogen and poses long-term toxicity to aquatic environments.

- Store in a cool, dry, well-ventilated area away from incompatible materials.
- Use containers made of HDPE or glass to prevent chemical reactions.
- Avoid exposure to light and heat to maintain chemical stability.
- Use appropriate personal protective equipment (PPE) including gloves and goggles during handling.
- Ensure proper ventilation in work areas to minimize inhalation exposure.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 55 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Warning**



Hazard Statements:

- H351: Suspected of causing cancer [Warning Carcinogenicity]
- H411: Toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment, long-term hazard]

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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