

PRODUCT IDENTIFICATION



Product Name: Perchloroethylene (PCE, PERC)

CAS Number: 127-18-4

Molecular Formula: C₂Cl₄

Molecular Weight: 165.8 g/mol

Grade: Technical

Purity / Concentration: 100%

Synonyms: Tetrachloroethylene, PERC

PRODUCT OVERVIEW

Perchloroethylene (PERC), Technical Grade, from Alliance Chemical is a 100% pure solvent, typically with an assay of 99.7%. This colorless liquid, also known as tetrachloroethylene, is widely used in the dry cleaning industry for its excellent stain removal properties. Its low water content (0.0050%) ensures stability in various applications.

Grade Significance: Technical Grade Perchloroethylene signifies a level of purity suitable for industrial applications and chemical processes. While not as stringently controlled as reagent grades, it offers a cost-effective solution for applications where high purity is not paramount but reliable performance is still required.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	99.7	99.5	—	GC
Color (APHA)	APHA	5	—	10	ASTM D1209
Specific Gravity (20°C)	g/mL	1.621	1.62	1.623	ASTM D4052
Residue After Ignition	%	0.0005	—	0.0010	Gravimetric
Water Content	%	0.0050	—	0.01	ASTM E203
Heavy Metals (as Pb)	ppm	ND	—	1	ICP-OES
Chloride (Cl ⁻)	ppm	0.1	—	1	Ion Chromatography
Acidity As HCl	ppm	1	—	5	Titration

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Colorless liquid with a mild, sweet odor	Odor	Sweet, chloroform-like odor
Form	Liquid	Boiling Point	121°C (250°F)
Melting / Freezing Point	-22°C (-8°F)	Flash Point	11°C (52°F)
Specific Gravity	1.623	Solubility	Slightly soluble in water, soluble in organic solvents
Molecular Formula	C ₂ Cl ₄	Molecular Weight	165.8 g/mol
Vapor Pressure (20°C)	8 mmHg	Viscosity (25°C)	0.89 cP
Refractive Index (20°C)	1.462	Density (25°C)	1.622 g/mL
Decomposition Temp.	Not readily decomposed; decomposes on strong heating		

APPLICATIONS

- Dry Cleaning** — Perchloroethylene is a highly effective dry cleaning solvent, prized for its ability to remove a wide range of stains from fabrics without causing shrinkage or damage. Its solvency and stability make it a preferred choice for professional garment care.
- Metal Cleaning** — In metal cleaning, PERC serves as a degreasing agent, removing oils, grease, and other contaminants from metal parts and machinery. Its strong solvent power ensures thorough cleaning, preparing surfaces for further processing or finishing.
- Chemical Synthesis** — Perchloroethylene acts as a building block in the synthesis of various chemicals and solvents. Its unique chemical structure allows it to be modified and incorporated into more complex molecules.
- Laboratory Applications** — Laboratories utilize PERC for extraction processes, separating target compounds from complex mixtures. It is also employed in chromatography, serving as a mobile phase for separating and analyzing different substances.
- Electronics Manufacturing** — PERC is used to clean circuit boards and electronic components, removing flux residues and other contaminants that can affect performance. Its high purity ensures that no residue is left behind that could interfere with electrical conductivity.

STORAGE & HANDLING

Proper storage of Perchloroethylene is crucial due to its potential hazards. It should be stored in tightly sealed containers in a cool, dry, and well-ventilated area to prevent the release of vapors and minimize the risk of environmental contamination, as it is toxic to aquatic life. Exposure to high temperatures or open flames should be avoided due to its flammability (flash point 11°C).

- Store in a cool, dry place away from heat sources and direct sunlight.
- Use containers made of HDPE or glass to prevent chemical reactions.
- Avoid contact with strong oxidizing agents and acids.
- Ensure proper ventilation when handling to minimize inhalation exposure.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.

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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