

PRODUCT IDENTIFICATION

**Product Name:** Hydrogen Peroxide 5% ACS Grade**CAS Number:** 7722-84-1**Molecular Formula:** H_2O_2 **Molecular Weight:** 34.015 g/mol**Grade:** ACS Grade**Purity / Concentration:** 5%**Synonyms:** Dihydrogen Dioxide, Hydrogen Peroxide Solution

PRODUCT OVERVIEW

Hydrogen Peroxide 5% ACS Grade is a high-purity oxidizing agent characterized by strictly controlled trace metal impurities, such as aluminum and calcium levels at 0.3 ppm. This clear, colorless liquid serves as a reliable reagent for analytical procedures and sensitive chemical reactions where purity is critical.

Grade Significance: ACS Grade designation ensures that the chemical meets the rigorous purity standards set by the American Chemical Society, guaranteeing that trace impurities are kept below specific, documented thresholds for consistent analytical performance.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Permanganate)	%	5	4.5	5.5	Permanganate Titration
Residue On Evaporation	ppm	6	0	20	Evaporation
Aluminum Al	ppm	0.3	0	1	ICP-MS
Arsenic Antimony As As	ppm	0.0030	0	0.01	ICP-MS
Calcium Ca	ppm	0.3	0	1	ICP-MS
Cobalt Co	ppm	0.15	0	0.5	ICP-MS
Copper	ppm	0.03	0	0.1	ICP
Iron	ppm	0.15	0	0.5	ICP
Lead Pb	ppm	0.15	0	0.5	ICP-MS
Magnesium Mg	ppm	0.03	0	0.1	ICP-MS
Manganese	ppm	0.3	0	1	ICP
Nickel Ni	ppm	0.03	0	0.1	ICP-MS
Potassium K	ppm	0.3	0	1	ICP-MS
Sodium Na	ppm	0.3	0	1	ICP-MS
Zinc Zn	ppm	0.3	0	1	ICP-MS
Chloride Cl	ppm	0.6	0	2	ICP
Phosphate Po4	ppm	0.6	0	2	ICP
Sulfate So4	ppm	1.5	0	5	ICP
Barium Ba	ppm	0.3	0	1	ICP-MS
Boron B	ppm	0.15	0	0.5	ICP-MS
Cadmium Cd	ppm	0.3	0	1	ICP-MS
Free Acid As H2So4	ueq/g	0.18	0	0.6	Titration
Silicon Si	ppm	0.3	0	1	ICP-MS
Silver Ag	ppm	0.15	0	0.5	ICP-MS
Strontium Sr	ppm	0.3	0	1	ICP-MS
Tin Sn	ppm	0.3	0	1	ICP-MS

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear colorless liquid with slight viscosity	Odor	Slightly sharp, reminiscent of bleach
Form	Liquid	Boiling Point	Not characterized for the 5% solution
Melting / Freezing Point	Not characterized for the 5% solution	Flash Point	93°C (199.4°F)
Specific Gravity	1.02	Solubility	Highly water soluble, limited organic solvent mix
Molecular Formula	H ₂ O ₂	Molecular Weight	34.015 g/mol
Vapor Pressure (20°C)	0.23 mmHg	Viscosity (25°C)	1.0 cP
Refractive Index (20°C)	1.406	Density (25°C)	1.01 g/mL

APPLICATIONS

1. **Analytical Chemistry** — Used as a precise oxidizing agent in titrations and complex analytical laboratory procedures.
2. **Water Treatment** — Applied to effectively oxidize and remove organic contaminants and pollutants from water systems.
3. **Textile Manufacturing** — Utilized as a gentle bleaching agent to whiten fabrics without damaging the underlying fiber structure.
4. **Paper and Pulp** — Functions as a chemical bleaching agent to improve the brightness and quality of paper products.
5. **Chemical Synthesis** — Acts as a foundational reagent in various oxidative chemical reactions requiring a controlled concentration.

STORAGE & HANDLING

Hydrogen Peroxide must be stored in a cool, ventilated area away from incompatible materials to prevent decomposition. Proper storage is essential to maintain product stability and mitigate safety risks, particularly as the solution can cause serious eye irritation if handled improperly.

- Store in a cool, dry place away from direct sunlight.
- Use containers made of HDPE or glass to prevent reactions.
- Avoid contact with organic materials and reducing agents.
- Ensure proper ventilation when handling to minimize inhalation risks.
- Wear appropriate personal protective equipment (PPE) such as gloves and goggles.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Warning**



Hazard Statements:

- H319: Causes serious eye irritation

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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