TECHNICAL DATA SHEET

Hydrogen Peroxide 25% ACS Grade

Revised: 08/03/2026

PRODUCT IDENTIFICATION

Product Name: Hydrogen Peroxide 25% ACS Grade
CAS Number: 7722-84-1
Molecular Formula: H_2O_2
Molecular Weight: 34.015 g/mol
Grade: ACS Grade
Purity / Concentration: 25%
Synonyms: Hydrogen Dioxide, Peroxide Solution

PRODUCT OVERVIEW

Hydrogen Peroxide 25% ACS Grade is a high-purity oxidizing agent essential for precision chemical processes and laboratory analysis. With tightly controlled impurity levels, such as copper at 0.03 ppm and chloride at 0.6 ppm, this solution ensures reliable, repeatable results in sensitive applications.

Grade Significance: ACS Grade signifies that this product meets the rigorous purity standards set by the American Chemical Society, ensuring it is suitable for demanding laboratory and industrial applications where quality control is critical.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Permanganate)	%	26	24	27	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	**Odor**	Slightly sharp, reminiscent of bleach
Form	Liquid	**Boiling Point**	Not characterized for the 25% solution
Melting / Freezing Point	Not characterized for the 25% solution	**Specific Gravity**	1.09
Solubility	Soluble in water, slightly soluble in organic solvents	**Molecular Formula**	H_2O_2
Molecular Weight	34.015 g/mol	**Vapor Pressure (20°C)**	0.23 mmHg
Viscosity (25°C)	1.2 cP	**Refractive Index (20°C)**	1.406
Density (25°C)	1.11 g/mL	**Decomposition Temp.**	Unstable; decomposes upon heating; no fixed decomposition temp

APPLICATIONS

1. **Analytical Chemistry** — Serves as a high-purity reagent for complex analytical procedures where trace contaminants must be minimized.
2. **Textile Manufacturing** — Utilized as a powerful bleaching agent to achieve consistent whitening and color preparation for high-quality fabrics.
3. **Water Treatment** — Acts as an effective oxidizer to remove organic contaminants and pollutants from industrial water systems.
4. **Chemical Synthesis** — Functions as a versatile reactant in various chemical reactions requiring a controlled and stable oxidative environment.

STORAGE & HANDLING

Due to its nature as an oxidizer, Hydrogen Peroxide 25% must be stored in a cool, well-ventilated area away from combustible materials to prevent fire hazards. Proper storage prevents decomposition and ensures the solution maintains its specified concentration and purity over time.

- 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 avoid inhalation of vapors.
- Wear appropriate personal protective equipment (PPE) including 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: Danger

Hazard Statements:

- H272: May intensify fire; oxidiser
- H302: Harmful if swallowed
- H314: Causes severe skin burns and eye damage
- H332: Harmful if inhaled
- H335: May cause respiratory 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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