

PRODUCT IDENTIFICATION



Product Name: Hydrogen Peroxide 25% Technical Grade

CAS Number: 7722-84-1

Molecular Formula: H₂O₂

Molecular Weight: 34.015 g/mol

Grade: Technical Grade

Purity / Concentration: 25%

Synonyms: H₂O₂, Peroxide Solution

PRODUCT OVERVIEW

Hydrogen Peroxide 25% Technical Grade is a versatile oxidizing agent characterized by its clear, colorless liquid form and a specific gravity of 1.09 g/mL (20°C). With a typical assay of 25.3%, this technical grade solution is commonly used in bleaching, water treatment, and various chemical reactions. It must be handled with care due to its strong oxidizing properties.

Grade Significance: Technical Grade indicates that this Hydrogen Peroxide 25% is suitable for industrial applications where a high degree of purity is not required, but consistent quality and concentration are necessary for effective performance. While it meets defined specifications, it may contain trace impurities that do not affect its intended use in various industrial processes.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	25.3	24.5	26.5	Titration with KMnO ₄
Color (APHA)	APHA	5	—	20	ASTM D1209
Specific Gravity (20°C)	g/mL	1.09	1.08	1.1	ASTM D891
Residue After Ignition	%	0.0020	—	0.02	Gravimetric
Heavy Metals (as Pb)	ppm	0.05	—	1	ICP-OES
Iron (Fe)	ppm	0.05	—	1	ICP-OES
Chloride (Cl ⁻)	ppm	0.1	—	2	Ion Chromatography
Phosphate (PO ₄ ³⁻)	ppm	0.1	—	5	Spectrophotometry
Sulfate (SO ₄ ²⁻)	ppm	0.5	—	10	Ion Chromatography
Acidity As H ₂ SO ₄	ppm	15	—	50	Titration

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid	Odor	Slightly sharp, acrid odor
Form	Liquid	Boiling Point	150°C (302°F)
Melting / Freezing Point	-0°C (31°F)	Specific Gravity	1.09
Solubility	Soluble in water	Molecular Formula	H ₂ O ₂
Molecular Weight	34.015 g/mol	Vapor Pressure (20°C)	0.5 mmHg
Viscosity (25°C)	1.2 cP	Refractive Index (20°C)	1.406
Density (25°C)	1.11 g/mL		

APPLICATIONS

- 1. Textile Industry** — Hydrogen Peroxide 25% Technical Grade is widely used as a bleaching agent for textiles, providing effective whitening and stain removal. Its oxidizing properties help to break down color pigments, resulting in brighter and cleaner fabrics.
- 2. Pulp and Paper Industry** — In the pulp and paper industry, this product serves as a bleaching agent for wood pulp, enhancing the brightness and whiteness of paper products. It is an environmentally favorable alternative to chlorine-based bleaching agents.
- 3. Water Treatment** — Hydrogen Peroxide 25% Technical Grade is used in water treatment processes to remove contaminants and improve water quality. It effectively oxidizes organic pollutants, disinfects water, and controls odors.
- 4. Chemical Synthesis** — As a strong oxidizing agent, this product is utilized in various chemical reactions for the synthesis of organic and inorganic compounds. It facilitates oxidation reactions, enabling the production of a wide range of chemicals.
- 5. Analytical Chemistry** — Hydrogen Peroxide 25% Technical Grade serves as a reagent in analytical chemistry applications, such as titrations and oxidation-reduction reactions. Its consistent concentration and purity make it suitable for quantitative analysis.
- 6. Environmental Remediation** — This product can be applied in environmental remediation efforts to treat contaminated soil and water. It helps to break down pollutants and reduce their environmental impact through oxidation processes.

STORAGE & HANDLING

Proper storage of Hydrogen Peroxide 25% Technical Grade is crucial to maintain its stability and prevent hazardous situations. As a strong oxidizer, it can react violently with incompatible materials, potentially causing fire or explosion. Storing it in a cool, dry, and well-ventilated area away from combustible materials is essential to mitigate these risks.

- 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) 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:

- H271: May cause fire or explosion; strong Oxidizer [Danger Oxidizing liquids; Oxidizing solids]
- H302: Harmful if swallowed [Warning Acute toxicity, oral]
- H314: Causes severe skin burns and eye damage [Danger Skin corrosion/irritation]
- H332: Harmful if inhaled [Warning Acute toxicity, inhalation]

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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