

## PRODUCT IDENTIFICATION

**Product Name:** Hydrogen Peroxide 25% ACS Grade**CAS Number:** 7722-84-1**Molecular Formula:**  $\text{H}_2\text{O}_2$ **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 ideal for critical analytical and industrial applications. With trace metal impurities like Arsenic and Antimony kept below 0.0030 ppm, this solution provides the consistency necessary for precise chemical reactions.

**Grade Significance:** ACS Grade indicates that this product meets the strict purity standards set by the American Chemical Society, ensuring it is suitable for demanding laboratory and analytical use. This certification provides users with the assurance of consistent quality and low impurity levels.

## 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

|                                 |                                                        |                                |                                                                |
|---------------------------------|--------------------------------------------------------|--------------------------------|----------------------------------------------------------------|
| <b>Appearance</b>               | Clear, colorless liquid                                | <b>Odor</b>                    | Slightly sharp, reminiscent of bleach                          |
| <b>Form</b>                     | Liquid                                                 | <b>Boiling Point</b>           | Not characterized for the 25% solution                         |
| <b>Melting / Freezing Point</b> | Not characterized for the 25% solution                 | <b>Specific Gravity</b>        | 1.09                                                           |
| <b>Solubility</b>               | Soluble in water, slightly soluble in organic solvents | <b>Molecular Formula</b>       | H <sub>2</sub> O <sub>2</sub>                                  |
| <b>Molecular Weight</b>         | 34.015 g/mol                                           | <b>Vapor Pressure (20°C)</b>   | 0.23 mmHg                                                      |
| <b>Viscosity (25°C)</b>         | 1.2 cP                                                 | <b>Refractive Index (20°C)</b> | 1.406                                                          |
| <b>Density (25°C)</b>           | 1.11 g/mL                                              | <b>Decomposition Temp.</b>     | Unstable; decomposes upon heating; no fixed decomposition temp |

## APPLICATIONS

1. **Analytical Chemistry** — Functions as a high-purity reagent for laboratory testing and quantitative analysis where low trace metal content is essential.
2. **Textile Manufacturing** — Utilized as a powerful bleaching agent to achieve consistent color and brightness in fabric processing.
3. **Water Treatment** — Acts as an effective oxidant to neutralize contaminants and improve water quality in industrial treatment systems.
4. **Chemical Synthesis** — Serves as a reliable source of reactive oxygen for various synthetic pathways and organic chemical reactions.

## STORAGE & HANDLING

As a strong oxidizer, Hydrogen Peroxide must be stored in a cool, ventilated area away from incompatible materials to prevent fire hazards. Proper containment is critical, as exposure to heat or contaminants can lead to decomposition and pressure buildup in storage vessels.

- 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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