

## PRODUCT IDENTIFICATION

**Product Name:** Hydrogen Peroxide 12% 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:** 12%**Synonyms:** Hydrogen Dioxide, Peroxide Solution

## PRODUCT OVERVIEW

Hydrogen Peroxide 12% ACS Grade is a high-purity, analytical-grade oxidizing agent characterized by its clear, pale blue appearance and precise concentration levels. With rigorous testing confirming low trace metal content—such as copper at 0.04 ppm and chloride at 1 ppm—this solution is ideal for sensitive laboratory and industrial applications.

**Grade Significance:** ACS Grade signifies that the product meets the stringent quality standards set by the American Chemical Society, ensuring it is suitable for analytical use and high-precision laboratory work.

## CERTIFICATE OF ANALYSIS — TYPICAL VALUES

| PARAMETER              | UNIT  | TYPICAL | MIN  | MAX  | TEST METHOD            |
|------------------------|-------|---------|------|------|------------------------|
| Assay (Permanganate)   | %     | 12.56   | 11.5 | 13   | Permanganate Titration |
| Residue On Evaporation | ppm   | 8       | 0    | 20   | Evaporation            |
| Aluminum Al            | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Arsenic Antimony As As | ppm   | 0.0040  | 0    | 0.01 | ICP-MS                 |
| Calcium Ca             | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Cobalt Co              | ppm   | 0.2     | 0    | 0.5  | ICP-MS                 |
| Copper                 | ppm   | 0.04    | 0    | 0.1  | ICP                    |
| Iron                   | ppm   | 0.2     | 0    | 0.5  | ICP                    |
| Lead Pb                | ppm   | 0.2     | 0    | 0.5  | ICP-MS                 |
| Magnesium Mg           | ppm   | 0.04    | 0    | 0.1  | ICP-MS                 |
| Manganese              | ppm   | 0.4     | 0    | 1    | ICP                    |
| Nickel Ni              | ppm   | 0.04    | 0    | 0.1  | ICP-MS                 |
| Potassium K            | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Sodium Na              | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Zinc Zn                | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Chloride Cl            | ppm   | 1       | 0    | 2    | ICP                    |
| Phosphate Po4          | ppm   | 1       | 0    | 2    | ICP                    |
| Sulfate So4            | ppm   | 2       | 0    | 5    | ICP                    |
| Barium Ba              | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Boron B                | ppm   | 0.2     | 0    | 0.5  | ICP-MS                 |
| Cadmium Cd             | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Free Acid As H2So4     | ueq/g | 0.1     | 0    | 0.6  | Titration              |
| Silicon Si             | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Silver Ag              | ppm   | 0.2     | 0    | 0.5  | ICP-MS                 |
| Strontium Sr           | ppm   | 0.4     | 0    | 1    | ICP-MS                 |
| Tin Sn                 | ppm   | 0.4     | 0    | 1    | ICP-MS                 |

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

## PHYSICAL & CHEMICAL PROPERTIES

|                          |                                                  |                                 |                                                   |
|--------------------------|--------------------------------------------------|---------------------------------|---------------------------------------------------|
| <b>Appearance</b>        | Clear, pale blue liquid with transparent quality | <b>Form</b>                     | Liquid                                            |
| <b>Boiling Point</b>     | Not characterized for the 12% solution           | <b>Melting / Freezing Point</b> | Not characterized for the 12% solution            |
| <b>Specific Gravity</b>  | 1.04                                             | <b>Solubility</b>               | Fully miscible with water, polar organic solvents |
| <b>Molecular Formula</b> | H <sub>2</sub> O <sub>2</sub>                    | <b>Molecular Weight</b>         | 34.015 g/mol                                      |

## APPLICATIONS

1. **Laboratory Research** — Utilized as a reliable reagent in complex chemical titrations and analytical methodologies where high purity is required for accurate results.
2. **Textile Manufacturing** — Acts as a powerful bleaching agent to remove natural pigments from fibers, ensuring consistent color quality in fabrics.
3. **Water Treatment** — Used as an effective oxidant for the remediation of organic contaminants and the purification of wastewater streams.
4. **Paper and Pulp** — Applied in the bleaching process of paper products to achieve superior brightness and structural integrity.
5. **Recreational Water** — Serves as a sanitizing agent in swimming pools to maintain water clarity and control bacterial growth.

## STORAGE & HANDLING

As a strong oxidizer, Hydrogen Peroxide must be stored in a cool, well-ventilated area away from combustible materials to prevent fire or explosion risks. Maintaining proper storage conditions is essential to preserve the product's stability and prevent decomposition caused by heat or contamination.

- 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.
- Maintain in a well-ventilated area to minimize vapor accumulation.
- 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

**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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