

## Technical Data Sheet (TDS)

### 1. Product Overview

- **Product Name:** Hydrogen Peroxide
- **English Name:** Hydrogen Peroxide
- **CAS Number:** 7722-84-1
- **Formula:** H<sub>2</sub>O<sub>2</sub>
- **Molecular Weight:** 34.01 g/mol
- **Concentration:** 35% Industrial Grade
- **Product Characteristics:** Colorless clear aqueous solution, strong oxidizing property, slightly acidic. Non-combustible but supports combustion; decomposes to water and oxygen at high temperature/contact with impurities. Corrosive to skin/eyes; excellent bleaching, disinfection and oxidizing performance. Stable under cool storage conditions; fully degradable in natural environment; suitable for industrial bleaching, disinfection, water treatment and chemical synthesis.

### 2. Technical Specifications (35% Industrial Grade)

Item	Specification
Appearance	Colorless clear liquid
Assay (H <sub>2</sub> O <sub>2</sub> )	34.0-36.0%
Acidity (as H <sub>2</sub> SO <sub>4</sub> )	≤ 0.05%
Stability (6h, 100°C)	≥ 97.0%
Chloride (Cl <sup>-</sup> )	≤ 50 ppm
Sulfate (SO <sub>4</sub> <sup>2-</sup> )	≤ 50 ppm
Heavy Metals (Pb)	≤ 5 ppm
Iron (Fe)	≤ 1 ppm
Residue on Evaporation	≤ 0.01%
pH Value (25°C)	2.0-4.0
Density (25°C)	1.12-1.14 g/cm <sup>3</sup>
Viscosity (25°C)	1.20-1.30 mPa·s

### 3. Product Advantages

1. **High Purity & Stability:** 35% high concentration with low impurity content; excellent thermal stability (≥97% retention after 6h at 100°C); consistent performance in industrial applications.
2. **Strong Oxidizing Property:** High oxidizing activity; effective bleaching, disinfection and oxidation without toxic byproducts (only H<sub>2</sub>O and O<sub>2</sub>).
3. **Eco-Friendly Degradation:** Rapidly decomposes to water and oxygen in natural environment; no bioaccumulation; no long-term environmental pollution.
4. **Versatile Application:** Multi-scenario use as bleaching agent, disinfectant, oxidizer and water treatment agent; suitable for various industrial fields.
5. **Easy Handling:** Aqueous solution with good fluidity; easy to dilute and apply with standard industrial equipment; controllable reaction rate with proper operation.

### 4. Application Fields

- **Paper & Textile Industry:** Bleaching agent for paper pulp, cotton, linen and synthetic fibers; high bleaching efficiency with minimal fiber damage.
- **Water Treatment:** Disinfectant for municipal sewage, industrial wastewater and drinking water; oxidizes organic pollutants and removes ammonia nitrogen.
- **Chemical Synthesis:** Oxidizing agent for organic synthesis (e.g., epoxy compounds, peroxides); intermediate for pharmaceutical and pesticide production.



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- **Food Industry:** Food-grade (3-5%) used as disinfectant for food processing equipment and packaging materials (comply with food safety standards).
- **Industrial Disinfection:** Disinfectant for industrial equipment, workshops and medical devices (high concentration for non-living tissue only).
- **Environmental Protection:** Oxidizing agent for soil and groundwater remediation; decomposes organic contaminants in contaminated sites.

## 5. Usage Methods

- **Bleaching (Textile/Paper):** Dilute to 5-10% concentration with deionized water; add to bleaching bath at 40-60°C; adjust pH to 8-10 with alkali; bleaching time 30-60 minutes; rinse thoroughly after bleaching.
- **Water Treatment Disinfection:** Add 10-50 ppm of 35% stock solution to water; stir evenly; contact time 30 minutes; residual H<sub>2</sub>O<sub>2</sub> decomposes naturally or with catalyst.
- **Chemical Synthesis:** Use as raw material in molar ratio according to synthesis process; control reaction temperature at 0-25°C; add slowly to reaction system to avoid violent reaction.
- **Industrial Disinfection:** Use undiluted 35% solution for surface disinfection; spray or wipe on non-living surfaces; let stand for 15 minutes; rinse with water (if needed).
- **Dilution Rule:** Always add hydrogen peroxide to water (**never water to hydrogen peroxide**) to avoid splashing and violent reaction; stir continuously during dilution.

## 6. Packaging & Storage

- **Packaging Specifications:** 5 L HDPE plastic bottles, 25 L HDPE plastic drums, 200 L HDPE plastic drums, 1000 L IBC totes (HDPE inner liner); customized packaging available.
- **Storage Conditions:** Cool, dry, well-ventilated warehouse (0-25°C); store in sealed opaque HDPE containers; avoid direct sunlight and high temperature; keep away from combustibles, metals, acids, bases and oxidizers.
- **Shelf Life:** 12 months (unopened, specified conditions); 3 months after opening (seal tightly and store in cool place).
- **Transportation:** Class 5.1 oxidizing substance; transport in sealed HDPE containers; avoid direct sunlight/high temperature; separate from combustibles/metals; comply with IMDG/IATA transport regulations.

## 7. Safety & Protection

- Wear chemical splash goggles, nitrile gloves, chemical protective suit and face shield for all handling; use fume hood for bulk operation.
- **Strictly avoid** contact with skin/eyes; severe burns will occur on contact; seek medical attention immediately if contact happens.
- Always add hydrogen peroxide to water for dilution; never the reverse; stir continuously to prevent local overheating.
- Do not mix with organic materials, metals, strong acids/bases or reducing agents; violent reaction/explosion may occur.
- Neutralize spills with sodium thiosulfate solution first; then clean up with inert absorbents; flush contaminated area with large amounts of water.

## 8. Quality Assurance

- Manufactured under ISO 9001 (quality) and ISO 14001 (environmental) management systems; strict raw material inspection and production process control.
- Each batch is tested for concentration, stability and impurities; accompanied by a Certificate of Analysis (COA) to ensure compliance with industrial standards.
- Provide technical support for formulation optimization, dosage adjustment and application equipment selection; on-site guidance for large-scale industrial use.
- Customizable concentrations (3%, 5%, 35%, 50%) available for different application scenarios; food-grade and industrial-grade options provided.