



ELPROTECT - H₂O₂TM (Hydrogen Peroxide)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	Colourless clear liquid
Physical Form	Liquid
Odor	Slightly Pungent
Molecular Weight	34.0147 g/mol
Density	1.11 g/cm ³
Specific Gravity	1.190 to 1.195 @ 20 °C
pH (aqueous solution)	0.5 to 2.5
Assay / Purity	50.0 to 50.80 % w/w
Chemical Properties	
Ionic Nature	Covalent compound.
Incompatibilities	Reacts with oxidizable materials, iron, copper, brass, bronze, chromium, zinc, lead, manganese, silver, aniline, flammable liquids, combustible materials (e.g., paper, wood), nitromethane, ketone solvents (e.g., acetone), aldehydes, and reducing agents.
Hazardous Reactions / Decomposition Products	Decomposes to oxygen and water, a reaction catalyzed by transition metals (e.g., iron, copper), light, and heat. Contact with organic materials may cause spontaneous combustion. Mixing with vinegar (acetic acid) can form peracetic acid, a respiratory irritant.
Thermal Properties	
Melting Point	-52 °C (Freezing Point)
Boiling Point	114 °C @ 760 mm Hg
Flash Point	Not flammable, but a powerful oxidizing agent that can cause spontaneous combustion.
Decomposition Temperature	The rate of decomposition increases more than two-fold for each 10 °C rise in temperature between 20-100 °C.
Thermal Stability	Stability as O ₂ emitted / 25 ml sample at 100 °C: < 0.30 ml/minute
Solubility	
Solubility in Water	Miscible in all proportions.
Solubility in Ethanol	Miscible.



Property	Specification
Solubility in Methanol	Soluble.
Solubility in Acetone	Miscible.
Solubility in Diethyl Ether	Soluble.
Solubility in Glycerol	Soluble.
Solubility in Chloroform	Nearly immiscible.

2. Processing Methods

All-Purpose Disinfectant Cleaner

A simple, non-toxic cleaner for hard, non-porous surfaces. The formulation below is based on a recipe using a pre-diluted 3% hydrogen peroxide solution.

Key Ingredients	Indicative Dosage (% w/w)
Hydrogen Peroxide (3% Solution)	~98.8%
Lavender Essential Oil	~0.5%
Lemon Essential Oil	~0.5%
Peppermint Essential Oil	~0.2%

Simple Mouthwash

A basic antiseptic oral rinse. This formulation is based on a 1:1 dilution of a standard 3% hydrogen peroxide solution with water.

Key Ingredients	Indicative Dosage (% w/w)
Hydrogen Peroxide (3% Solution)	50.0%
Water (Distilled or Filtered)	50.0%

Flavored Mouthwash

An antiseptic oral rinse with essential oil for flavor.

Key Ingredients	Indicative Dosage (% w/w)
Water (Distilled or Filtered)	~66.5%
Hydrogen Peroxide (3% Solution)	~33.3%
Spearmint Essential Oil	~0.2%

3. Dosing by Application



Application	Recommended / Max Dosage
Aseptic Packaging / Food Contact Surface Sterilization	Use 30-35% solution for sterilization process. Residual H ₂ O ₂ in food must not exceed 0.5 ppm.
Surface Disinfection (General Purpose)	3% solution
Surface Disinfection (Heavy Mildew)	5% - 8% solution
Food Contact Surface Sanitizing	0.5% - 1% solution
Fruit & Vegetable Wash	Add approx. 1/4 cup of 3% solution to a sink of cold water.
Cheesemaking (Milk Treatment)	Max. 0.05% of the weight of the milk.
Dairy Processing (pH Control)	Max. residual level of 5 mg/kg (5 ppm) in the final product.
Raw Milk Preservation (where permitted)	0.03% - 0.08% (300-800 ppm)
Mouthwash	1.0% - 1.5% solution. (FDA considers up to 3% safe for this use).
Teeth Whitening (Over-the-Counter / At-Home)	3% - 14%
Teeth Whitening (Professional In-Office)	16% - 40%

The information and data contained herein are believed to be accurate but may not be all inclusive and should only be used as a guide. The information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the product for his particular use and on condition that they assume the risk of the use thereof.

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