



## HYDROGEN PEROXIDE (H<sub>2</sub>O<sub>2</sub>) (Perhydrol, Hydroxyperoxide, Oxydol)

### PRODUCT SPECIFICATIONS:

|   | <b>%30</b>             | <b>%35</b> | <b>%50</b> | <b>%60</b> | <b>%70</b> |
|---|------------------------|------------|------------|------------|------------|
| Concentration (% m/m) :                       | 30                     | 35         | 50         | 60         | 70         |
| Acidity (% H <sub>2</sub> SO <sub>4</sub> ) : | 0,04                   | 0,04       | 0,04       | 0,045      | 0,045      |
| Stability (%m/m) :                            | 97                     | 97         | 97         | 97         | 97         |
| Appearance :                                  | Clear, colorlessliquid |            |            |            |            |

### PHYSICAL AND CHEMICAL PROPERTIES:

|                                    | <b>%30</b> | <b>%35</b> | <b>%50</b> | <b>%60</b> | <b>%70</b> |
|------------------------------------|------------|------------|------------|------------|------------|
| Concentration                      |            |            |            |            |            |
| Boiling Point (°C)                 | 106        | 108        | 114        | 119        | 125        |
| Freezing Point (°C)                | -25        | -32        | -52        | -56        | -37,5      |
| Active O <sub>2</sub> Content (%)  | 14,1       | 16,4       | 23,5       | 28,5       | 32,9       |
| Relative density (20°C/4°C)        | 1,11       | 1,13       | 1,19       | 1,24       | 1,29       |
| Total Vapor Pressure (30°C) torr   | 25         | 24         | 18         | 14         | 11         |
| Partial Vapor Pressure (30°C) torr | 0,25       | 0,3        | 0,6        | 0,9        | 1,3        |

### PACKAGING:

Delivered in 65 kg plastic drums, 1 m<sup>3</sup> IBC tanks and bulk in ISO containers.

### ANALYTICAL METHOD:

|               |   |
|---------------|---|
| Method :      | Titrimetric   |
| Reagents :    | 0,1 N KMnO <sub>4</sub> and % 5 H <sub>2</sub> SO <sub>4</sub> (Analytical purity)  |
| Procedure :   | Take 0,15-0,20 gr of sample, put weighing bottle in a 250 mL Erlenmeyer flask containing 100mL of % 5 sulfuric acid, titrate with 0,1 N potassium permanganate standard solution to a pink color, which does not disappear in 30 sec. |
| Calculation : |   |

$$\% \text{H}_2\text{O}_2 = \frac{F \times V \times 0,17}{G}$$

|     |  |
|-----|--|
| F : | Factor of 0,1 N KMnO <sub>4</sub> Standart solution      |
| V : | Volume of 0,1 N KMnO <sub>4</sub> standart solution (mL) |
| G : | weight of hydrogen peroxide sample, (gr)                 |

### APPLICATION FIELDS

|                                     |   |
|-------------------------------------|---|
| Industry of Textile                 | : As a bleaching agent.   |
| Industry of Pulp and Paper          | : As a bleaching agent.   |
| Industry of Chemistry               | : In oxidation and hydroxylation reaction; also in the production of organic/inorganic peroxy compound like perasetic acid, sodium perborate, sodium percarbonate and calcium peroxide. |
| Industry of Environmental Chemicals | : Waste water treatment; as a detoxifying agent and provides dissolved oxygen.  |
| Food Processing                     | : Sterilization of packaging of milk, fruit, juices etc.  |
| Industry of Pharmaceutical          | : Topical antiseptic and contact lens cleaner.  |
| Industry of Cosmetic                | : Hair bleaching and dye setting through oxidation.   |
| Industry of Mining                  | : Removing poisonous effects of different mines.  |
| Industry of Metallurgy              | : Forming of metallic surface.  |
| Industry of Pool Chemical           | : Water cleaning and recovery.  |

**STORAGE AND HANDLING:**

Hydrogen Peroxide should be stored in a cool place, away from direct sunlight, heat and oxidizing agents.

Keep the empty containers sealed to prevent the penetration of any catalytically active contaminant.

Avoid the contact with organic material or oxidizable product. Even though the product is not flammable itself, the concentrated solution will act as a strong oxidizing agent and may ignite flammable materials.

Always keep sufficient water to wash the area, in case of an accidental leakage or spill. Aerate the place in order to remove the hydrogen peroxide vapor.

Wear a protective clothing, to avoid the corrosive effect of hydrogen peroxide on skin, mucous membranes and respiratory passages.

Materials that are suitable for storage of hydrogen peroxide:

Stainless steel(304/316 L)

Pure aluminum (min % 99,5)

Tantalum

Zirconium

Glass/Ceramic

Polyethylene and PVC (They can only be used for the concentrations up to 60 wt %)