HYDROGEN PEROXIDE

PRODUCT IDENTIFICATION

CAS NO.	7722-84-1
EINECS NO.	231-765-0
FORMULA	H_2O_2
MOL WT.	34.01
H.S. CODE	2847.00
TOXICITY	
SYNONYMS	Peroxide; Hydrogen Dioxide; Albone; Inhibine; Perhydrol; Peroxan; Oxydol; Hydroperoxide; Hioxy; Dihydrogen Dioxide; Perossido Di Idrogeno (Italian); Peroxyde D'hydrogene (French); Wasserstoffperoxid (German); Aterstofperoxyde (Dutch);
DERIVATION	
CLASSIFICATION	DISINFECTANTS /

GENERAL DESCRIPTION

Hydrogen Peroxide is a is a strong oxidizing agent and a weak acid in water solution. The formular is similar to that of water, with an extra atom of oxygen attached, H2O2. It is completely soluble in water. Pure anhydrous hydrogen peroxide is a colorless to pale blue syrupy liquid which decomposes violently into water and oxygen if heated above 80 C. it also decomposes in light and in the presence of metal ions or oxidizable organic materials. A small amount of stabilizer such as acetanilide is added to the solutions to retard the decomposition. One volume of hydrogen peroxide releases ten volumes of oxygen when it decomposes. It is commercially prepared by electrolysis of ammonium bisulfate or potassium bisulfate with sulfuric acid. Catalytic oxidation of hydrogen and water with oxygen using nickel, palladium, or platinum with an anthraquinone, reaction of barium peroxide with sulfuric acid and by oxidation of isopropanol with acetone are also industrial processes for the production of hydrogen peroxide. Hydrogen peroxides are marketed in concentration of 3-90% by wt as a solution in water. The most valuable property of hydrogen peroxide is that it breaks down into water and oxygen and therefore does not form any persistent, toxic residual compounds. It is used in the processes of epoxidation, oxidation, hydroxylation and reduction. Its oxidizing properties are used in the bleachings and deodorizing for textile, hair and in paper manufacture. It is also used medicinally as an antiseptic. Its application involves the production of chemicals, e.g. organic peroxides, perhydrates. It is also used in water and sewage treatment, mining, electronics, food and cosmetic indutry.

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Clear, colorless liquid
MELTING POINT	-11C (90%), -39 C (70%)
BOILING POINT	141 C (90%), 125 C (70%)
SPECIFIC GRAVITY	1.4 (90%), 1.3 (70%)
SOLUBILITY IN WATER	Infinitely soluble
pH	1.3 (70%)
VAPOR DENSITY	1.17
AUTOIGNITION	
NFPA RATINGS	Health: 2; Flammability: 0; Reactivity: 3
REFRACTIVE INDEX	1.414
FLASH POINT	Not combustible
STABILITY	It may undergo violent decomposition with many organic materials, metals and alkalies as an strong oxidizer.

APPLICATIONS

Pulp and paper, chemical synthesis, environmental uses, including water treatment, textiles, mining, electronics, food and cosmetic.

TYPICAL SPECIFICATION

	35%	50%	70%
APPEARANCE	Clear Colorless Odorless And Waterlike		
ACTIVE OXYGEN	16.5% min	23.5% min	32.9% min
SPECIFIC GRAVITY	1.133	1.196	1.288
BOILING POINT	108 C	114 C	126 C
VISCOSITY	1.81	1.89	1.93
FREEZING POINT	-33 C	-52 C	-40 C
APPARENT pH	2.5	1.8	0.5

TRANSPORTATION

PACKING	Drum
HAZARD CLASS	5.1, 8 (Packing group: I)
UN NO.	2014

REMARKS