GENERAL DESCRIPTION OF HYDROGEN PEROXIDE

Hydrogen peroxide is a chemical compound with the empirical formula H_2O_2. Because of the compound's complete miscibility with water above 32 F, hydrogen peroxide is commercially available in aqueous solutions at concentrations to ~98 percent by weight H_2O_2. Propellant-grade hydrogen peroxide has generally been limited to aqueous solutions ≥ 70 w/o H2O2 with regulation of the concentrations and impurity levels of the more frequently applied propellant grades by government procurement specifications.

Hydrogen peroxide and its aqueous solutions are water-like in appearance in both the liquid and solid states. Although hydrogen peroxide is generally considered odorless, the odor of high vapor concentrations has been described as sweet and comparable to the odor of weak concentrations of ozone and the halogens. Aqueous hydrogen peroxide solutions are more dense, slightly more viscous, and have higher boiling and lower freezing points than water.

Hydrogen Peroxide Sensitivity to Shock and Impact

Although hydrogen peroxide solutions are normally insensitive to shock and impact and are nonflammable, they are active oxidizing materials and can decompose exothermally to yield water and oxygen. Because of their strong oxidizing nature and the liberation of oxygen and heat during their decomposition, propellant-grade solutions can initiate the vigorous combustion of many common organic materials such as clothing, wood, wastes, etc. In the absence of

contamination, propellant-grade hydrogen peroxide solutions are relatively stable (nominal decomposition rates are 0.1 percent per year) over ambient temperature ranges. However, in the presence of higher temperatures and/or various contaminants (including many inorganic materials), the decomposition rate is drastically increased. Rapid decomposition can occur in situations where extreme temperature levels and/or mass contamination are present. As the decomposition rate increases, the attendant heat release causes additional decomposition; this bootstrap effect can lead to a runaway reaction.

Storing and Shipping Hydrogen Peroxide

Hydrogen peroxide is normally stored, shipped, and handled as a liquid under its own vapor pressure with provisions for relief of pressure buildup. When stored and/or transferred in clean, passivated, compatible systems by properly educated and trained personnel, hydrogen peroxide does not present a serious storage or handling problem.

Source : http://www.diyspaceexploration.com/general-description-of-hydrogen-peroxide/