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Technical Bulletin - KPM-102

Safe Use and Handling of Hydrogen Peroxide (ETP) - H_2O_2

CAS Number: **7722-84-1**
Packing Group: **II**
Hazard Classification: **8, 5.1**

About Us

Kredence Electronics Materials India Pvt. Ltd has been providing high quality, Photovoltaic and Electronic grade chemicals to their customers throughout India and internationally since 2015. We at Kredence are committed to customer satisfaction achieved by clearly understanding the customers' needs and fulfilling those requirements through continual improvement of products, services, and the quality management system. In addition to that, **our company values the safety and well-being of our employees, customers, community, and the environment surrounding us. Our highly trained and experienced staff uses specialized equipment and technology to certify our customers receive quality service. Kredence electronics Materials performs routine sample analysis to ensure grade specification requirements are met.**

Purpose

When working with hazardous materials on a day-to-day basis, it is important to be aware of the chemicals' properties, risks, and safety precautions that need to be followed. This Technical Bulletin serves the purpose to educate our customers and employees about the chemical nature, safety, and provisions associated with Hydrogen Peroxide (H_2O_2).

Hydrogen Peroxide 30-50% EL / PV Grade is currently provided by Kredence Electronics Materials India Pvt. Ltd. (Other concentrations/ specifications can be available)

Product Overview

Hydrogen Peroxide is a very pale blue solution at room temperature that is odorless. It is unstable in the presence of light/heat and will slowly decompose into hydrogen and oxygen. Hydrogen peroxide has many industrial and household uses as an oxidizer, bleaching agent, and antiseptic. Industries in which hydrogen peroxide is used include: chemical synthesis, aseptic packaging, cosmetics & medicine, electronics, environment, food processing, mining, pulp and paper, textile, transportation, etc. Hydrogen peroxide 30-50% PV / EL grade (H_2O_2) is used to reduce biochemical oxygen demand (BOD) and chemical oxygen demand (COD) in wastewater. Hydrogen Peroxide is harmful to health if ingested or inhaled at HIGH concentrations. Refer to OSHA for exposure limit guidelines.

Safety

- Wear protective gloves/protective clothing/eye protection/face protection.
- Keep away from heat/fire
- Keep / Store away from combustible materials.
- Take precautions to avoid mixing with combustibles.
- Do not breathe fume/ mist.

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- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Keep away from combustible materials - Copper alloys - Strong reducing agents - Heavy metals - Iron

Handling

- Wear PPE when handling H_2O_2
- Avoid contamination as it may cause decomposition into hydrogen and oxygen
- Only use glass, stainless steel, aluminum, or plastic instruments for handling H_2O_2

Storage

- Should be kept in cool areas out of direct sunlight
- ONLY store in compatible containers
- Keep away from combustible material
- Ventilation of any kind should be available to prevent release of vapor or mist into surroundings
- Storage containers should be vented
- Refer to Figure 1 on Page 3 for appropriate use of storage containers

Transport

- Containers are not to be stacked during transit and should be kept upright
- Storage containers should be vented; therefore, air transport is restricted!
- Properly use forklift and trolleys.

***If exposed to Hydrogen Peroxide, immediately follow First-Aid procedures as stated in MSDS.**
***Contact with metals, metallic ions, alkalis, reducing agents and organic matter may cause self-accelerated thermal decomposition.**
*** Hydrogen peroxide may induce or increase the severity of a fire. Only use water to extinguish.**

References

(1.) D. E. Clark, “Peroxides and peroxide-forming compounds,” Chemical Health & Safety, 2001 *8* (5), Pages 12-22, DOI: 10.1021/acs.chas.8b08507.
(2.) G. Goor, J. Glenneberg, S. Jacobi, J. Dadabhoy, E. Candido, “Hydrogen Peroxide” Ullmann’s Encyclopedia of Industrial Chemistry, Wiley-VCH Verlag GmbH & Co. KGaA, Online, Jul.(30), 2019.
(3.) National Center for Biotechnology Information. "PubChem Compound Summary for CID 784, Hydrogen peroxide" *PubChem*, https://pubchem.ncbi.nlm.nih.gov/compound/Hydrogen-peroxide. Accessed: 4 February, 2021.
(4.) R. J. Kelly, “Review of Safety Guidelines for Peroxidizable Organic Chemicals,” Chemical Health & Safety, 1996, *3* (5), Pages 28-36, DOI: 10.1021/acs.chas.8b03515.

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Figure 1: Hydrogen Peroxide PV grade ready for transport in an IBC with proper labeling. As shown above, brown taping is used for easy visual identification. All KOH IBCs at our facility are stored together to maintain compatibility.

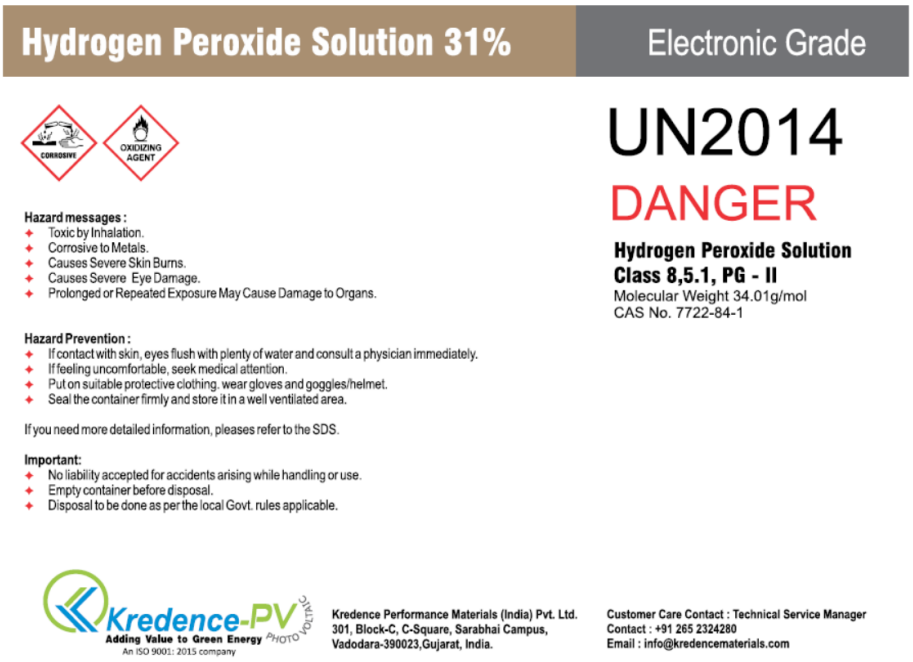

Figure 2: Customized product label included on all IBCs and containers that customers receive from Kredence. Label includes important product information.