HYDROGEN PEROXIDE
Storage & Handling
Technical Data Sheet

NORTH AMERICAN HYDROGEN PEROXIDE PRODUCERS SAFETY STANDARD: STORAGE AND HANDLING OF HYDROGEN PEROXIDE

INTRODUCTION

As an active member of the North American Peroxide Producers Safety Committee, Solvay Chemicals, Inc. actively participated in the development of these bulk storage standards. These guidelines are minimum standards that all of the hydrogen peroxide producers endorse. It is vitally important that any potential new hydrogen peroxide facility design be accomplished in conjunction with North American peroxide producers, in order to cover all of the unique design parameters for hydrogen peroxide.

All new delivery locations for Solvay Chemicals MUST be inspected and approved prior to the first delivery of bulk hydrogen peroxide. Solvay Chemicals has additional detailed technical information that can aid in the safe design of bulk hydrogen peroxide equipment. For copies of this technical information regarding hydrogen peroxide, call 1-800-SOLVAY-C (800-765-8292).

MINIMUM RECOMMENDED SAFETY STANDARDS FOR STORAGE AND HANDLING OF HYDROGEN PEROXIDE

These MINIMUM RECOMMENDED SAFETY STANDARDS have been developed by all of the North American Hydrogen Peroxide Producers to assist their customers in the safe storage and handling of hydrogen peroxide.

Users of hydrogen peroxide are urged to comply with these standards and to review periodically their practices to ensure that they remain in compliance.

Under the Responsible Care® initiative, the North American Hydrogen Peroxide producers are available to assist in understanding and meeting these MINIMUM RECOMMENDED SAFETY STANDARDS.

PRE-DELIVERY

The customer site must be inspected by a producer's representative prior to the first delivery of hydrogen peroxide.

All persons handling hydrogen peroxide must be properly trained in its hazards. Producers' safety materials are available to assist in this effort.

If hydrogen peroxide is diluted at the customer site for bulk storage, a dilution water sample must be analyzed and approved by the supplier.

UNLOADING AREA

A source of water must be available close to the unloading area for safety purposes.

A safety shower and eyewash fountain must be located close to the unloading area.

The storage tank must be properly identified by a label explaining the hazards of hydrogen peroxide, including a National Fire Prevention Association (NFPA) placard for firefighting purposes.

The fill lines must also be identified as containing hydrogen peroxide.

No combustible materials should be stored close to the hydrogen peroxide storage or unloading area.

Appropriate personal protective equipment must be worn if exposure to hydrogen peroxide is possible. Splash-proof chemical goggles, rubber boots and gloves, or other chemical-resistant materials should be worn. Leather gloves and boots must be forbidden because contact with hydrogen peroxide can cause a fire. Refer to the Safety Data Sheet (SDS) for further information, available at www.solvay.com.

STORAGE TANK DESIGN

Hydrogen peroxide storage tanks should be located in a suitable environment with adequate containment provided.

For most grades of hydrogen peroxide, storage tanks should be made of high-purity aluminum, stainless steel 304, 304L, 316, or 316L. The storage tanks must be properly passivated before putting into hydrogen peroxide service. To ensure compatibility or for the use of other storage tank materials, check with your hydrogen peroxide supplier.

The storage tanks should be operated at atmospheric pressure.

A continuous vent and properly sized emergency relief valve should be installed on all hydrogen peroxide tanks. Contact your producer for recommendations.

Local level indication should be installed on all hydrogen peroxide storage tanks.

Temperature monitoring systems should be installed on all tanks containing greater than 60% hydrogen peroxide.

EQUIPMENT

Hydrogen peroxide must be handled with dedicated equipment made of proper materials. Contact your producer for recommendations.

Hydrogen peroxide systems should be designed to avoid entrapment, thus preventing excess pressure buildup from oxygen evolution. For example, plug or ball valves should be properly vented for use with hydrogen peroxide.

Systems must be designed to prevent backflow of process or water systems into hydrogen peroxide tanks or containers.

Transfer of hydrogen peroxide should not be done by tank pressurization. Pumps or gravity flow should be used.

Hydrogen peroxide must not be returned to the storage container other than by closed-system centrifugal-pump recycle line.

Any proposed design changes to hydrogen peroxide storage and handling systems should be reviewed with the hydrogen peroxide producer.

STORAGE AND HANDLING

Store hydrogen peroxide in the original vented container, upright, in a cool, ventilated area where it is protected from damage, or in bulk storage tanks made from approved materials of construction.

Do not store other chemicals, fuels, or combustible materials near hydrogen peroxide.

Never return unused hydrogen peroxide to the storage container.

When empty, rinse all peroxide containers thoroughly with clean water before discarding.

Use only approved materials for pumps, piping, valves and hoses.

If hydrogen peroxide drums are stored on pallets, wooden pallets should not be used. Refer to NFPA 430.

SAFETY

Persons working with hydrogen peroxide should be familiar with personal protective equipment, first aid measures and the proper safety and handling procedures. Consult the SDS for appropriate information.

Prevent accidental decomposition by keeping the product free of contaminants.

Prevent fires by avoiding accidental spills. Water is the preferred method for extinguishing fires in which hydrogen peroxide is present.

Use water to respond to all incidents, e.g., fires, spills, leaks, etc., involving hydrogen peroxide.

Spills and leaks should be contained, diluted with copious amounts of water and disposed of in compliance with local regulations.

Hydrogen peroxide storage or handling areas should be equipped with a safety shower, an eyewash station, and a water hose.

FIRST AID

In case of product splashing into the eyes and face, treat eyes first.

Eye contact: Flush eyes immediately with water for at least 15 minutes. Call a physician.

Skin contact: Immediately flush skin with water while removing contaminated clothing and shoes.
Call a physician if irritation persists.

Inhalation: Remove the victim from the contaminated area to fresh air. Call a physician in case of respiratory symptoms.

Ingestion: Consult with a physician immediately in all cases. DO NOT induce vomiting. If victim is conscious, rinse mouth with fresh water.

DANGER

Hydrogen peroxide solutions are strong oxidizers and corrosive to the eyes, mucous membranes and skin. Consult the SDS for the appropriate Personal Protective Equipment to wear when handling hydrogen peroxide. In case of contact with the eyes, skin or clothing, flush with large amounts of water for 15 minutes. In case of ingestion, rinse mouth with water, but do not induce vomiting. Seek immediate medical attention. Product in contact with combustible materials may cause fires.

Before using, read Safety Data Sheet (SDS) for this chemical.
Solvay Chemicals, Inc.
24-hour Emergency Phone Number – 800-424-9300 (CHEMTREC®)

Before using, read the Safety Data Sheet (SDS) for the chemical, available at www.solvay.com.