

Federal Aviation Administration
Civil Aviation Security
Dangerous Goods Advisory Bulletin

Information of Concern to Air Carriers and Indirect Air Carriers.

Subject: Transportation of Hydrogen Peroxide (H₂O₂)

Number: DGAB-01-01

Date: November 28, 2001

Information: The Federal Aviation Administration is aware of an incident that occurred on October 28, 1998 in which two gallons of a 35-percent hydrogen peroxide solution in water spilled in the cargo compartment of a passenger aircraft while in route from Orlando, Florida to Memphis, Tennessee. The spilled hydrogen peroxide contaminated three mail sacks and an undetermined number of passenger bags. Some of those bags were transferred and then transported aboard other passenger aircraft. The National Transportation Safety Board (NTSB) report indicated that although airline personnel were alerted to the potential contamination of the arriving bags, no one was advised of the potential fire hazards. The report indicated that baggage handlers who opened the cargo compartment of one of the aircraft discovered smoke coming from the area of two adjacent suitcases.

On June 8, 2000, the National Transportation Safety Board (NTSB) issued the following recommendation (A-00-51) to the FAA:

"Develop, with the assistance of the Hydrogen Peroxide Safety Producers Committee, and distribute to carriers guidance about the difficulty of identifying a hydrogen peroxide spill and about the danger of allowing hydrogen peroxide to dry on organic materials (including paper, fabric, cotton, and leather), which may result in a fire."

As a result, the following guidance was developed to help identify and control hydrogen peroxide:

Special care must be taken when leakage of baggage or cargo is discovered, even when the liquid is clear, colorless, and odorless. Do not **assume** it is water. If you encounter hydrogen peroxide, special care should be taken.

On October 11, 2001, the Hydrogen Peroxide North American Producers Committee and the Department of Transportation, Research and Special Programs Administration (RPSA) approved the following precautionary guidance for industry:

Hydrogen Peroxide (H2O2) Identification and Hazards

Hydrogen peroxide solution is a clear, colorless, odorless liquid. Commercially available grades of hydrogen peroxide are aqueous solutions that are miscible with water in any ratio. Due to its water-like appearance, it is difficult to distinguish hydrogen peroxide from water by sight and/or smell. At concentrations of 8% by weight and higher, hydrogen peroxide is classified by DOT as an oxidizer and regulated as a hazardous material. Hydrogen peroxide solutions are acidic (the pH of a 35% hydrogen peroxide solution ranges from 2 to 4; higher concentrations are more acidic). Therefore, the use of pH paper may help to determine if a spill is water or possibly a hydrogen peroxide solution. Alternately, hydrogen peroxide test strips can be used to detect a hydrogen peroxide solution.

IMMEDIATE HAZARDS

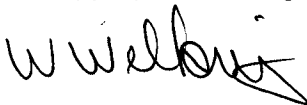
Fire - Residual hydrogen peroxide that is allowed to dry (evaporation of water causes hydrogen peroxide solution to concentrate) on organic materials such as paper, fabric, cotton, leather, wood or other combustible materials can cause the material to ignite and may result in a fire.

Exposure - Hydrogen peroxide may cause ***irreversible*** tissue damage to the eyes, including blindness. Hydrogen peroxide solutions are corrosive to eyes, nose, throat, lungs and skin. Also, hydrogen peroxide vapors are corrosive to eyes, throat and lungs.

As a result of this incident, the 2003/2004 version of International Civil Aviation Organization Technical Instructions will be amended to include language that will outline procedures in dealing with suspected contaminated packages.

For additional information, two documents are available which provide additional guidance to emergency responders when an incident involving dangerous goods has occurred:

- a. International Civil Aviation Organization "Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods." This document contains general information on factors to be considered when there is potential risk for a dangerous goods incident. The guidance includes instructions on actions to be taken by the flight crew to mitigate or prevent emergencies involving dangerous goods. This information is intended to be used in association with existing emergency procedures already contained in the aircraft flight operations manual.
- b. Emergency Response Guidebook. This guidebook is jointly issued by the governments of Canada, Mexico and the U.S. and has been translated and printed in numerous languages. It applies to transportation by all modes, and is intended to provide guidance to first responders during the initial phase of a dangerous goods incident. It cross-references an extensive list of dangerous goods with specific as to the appropriate emergency response procedures.



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