

MATERIAL SAFETY DATA SHEET

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No. 44B
HYDROGEN PEROXIDE
(27-52%)
Date December 1978

SECTION I. MATERIAL IDENTIFICATION				
<p>MATERIAL NAME: HYDROGEN PEROXIDE (27-52%) DESCRIPTION: A solution of hydrogen peroxide in very pure water with a small amount stabilizer (or, in the case of an electronic grade hydrogen peroxide, a <u>very</u> small amount of stabilizer). OTHER DESIGNATIONS: H₂O₂ Solution, CAS# 007 722 841 MANUFACTURER: Material is available from several suppliers, including FMC Corporation and Pennwalt Corporation</p>				
SECTION II. INGREDIENTS AND HAZARDS		Wt. %	HAZARD DATA	
Hydrogen Peroxide (H ₂ O ₂) Water (H ₂ O) Proprietary Stabilizer (such as acetanilide, sodium stannate or other)		27-52 73-48 Small amount	8-hr TWA 1 ppm* Rat, inhalation LCLo 100 ppm (pulmonary edema)	
*Current TLV for OSHA and ACGIH (1978). Material increases in hazards as H ₂ O ₂ concentration increases.				
SECTION III. PHYSICAL DATA				
	27.5%	30%	35%	50%
Boiling point at 1 atm, deg C	105.6	106.0	107.8	113.9
Vapor pressure at 30 C, mm Hg	25.5	24.8	23.3	18.3
Partial pressure H ₂ O ₂ at 30 C, mm Hg	0.2	0.23	0.28	0.56
Specific gravity (20/4 C)	1.10	1.11	1.13	1.20
Approx. freezing point, deg C	-22	-25	-33	-51
Volume oxygen produced/1 volume solution	100	110	130	197
Water solubility	-----MISCIBLE-----			
Appearance & Odor: A clear, colorless to light blue, water-like liquid without odor (or with a characteristic slightly acidic odor).				
SECTION IV. FIRE AND EXPLOSION DATA			LOWER	UPPER
Flash Point and Method	Autoignition Temp.	Flammability Limits In Air		
None	None	None		
<p>Extinguishing Media: Use water in large amounts to fight fire in which this material is involved. Hydrogen peroxide is non-flammable, but it provides oxygen to facilitate or initiate burning of surrounding combustibles. It can be a dangerous fire hazard. Use large amounts of water to dilute and/or flush away hydrogen peroxide spills or cool containers in a fire situation. Heated containers can rupture violently. Firefighters must use self-contained breathing equipment and must have eye protection to fight fires involving this material.</p>				
SECTION V. REACTIVITY DATA				
<p>H₂O₂ is a high energy material which is stabilized for commercial use and storage with inhibitors and by keeping cool and free of contaminants. It does not polymerize but can decompose with rapid release of heat and oxygen. Containers must be vented to allow escape of oxygen resulting from slow decomposition. Keep away from sources of heat. Keep pure. Keep this powerful oxidizing agent away from any contact with combustibles including lubricants and graphite. Spontaneous combustion may occur on standing in contact with readily flammable materials. Violent, catalytic decomposition will occur in contact with certain metals such as: iron, copper, chromium, brass, bronze, lead, silver, manganese or their salts. Decomposed by alkalis and even ordinary dust or rust. It must be handled in compatible containers and equipment and kept free from contamination.</p>				

SECTION VI. HEALTH HAZARD INFORMATION

TLV 1 ppm H₂O₂ (See Sect. II)

Inhalation of excessive levels of vapors causes irritation and inflammation of the respiratory tract. It is irritating in contact with the skin. Solutions of over 35% H₂O₂ can readily cause blistering of the skin. The eyes are particularly sensitive to injury by contact with this material. Do not ingest! solutions > 3% H₂O₂ should never be allowed to come in contact with the mouth!

FIRST AID:

Eye contact: Flush out eyes thoroughly with running water for 15 minutes. Promptly contact a physician.

Skin contact: Wash off the contact area immediately with plenty of water. Remove contaminated clothing promptly. If burns have occurred, or if irritation persists, get medical help. (Immerse contaminated clothing in water until laundered).

Inhalation: Remove to fresh air. If irritation persists, get medical help.

Ingestion: Give water to drink to dilute; encourage vomiting. Give lukewarm water freely and encourage belching if there is evidence of distension. Contact physician.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Prepare in advance for emergency situations! Have source of plenty of water available for dilution and flushing of spills; have available drainage free from incompatible chemicals. Safety personnel should be given prompt notification of significant spills. Immediately dilute spills with copious amounts of water; flush away from combustible materials. Provide maximum ventilation; eliminate sources of ignition. evacuate area except for clean-up personnel, who must use protective equipment. (See Sect. VIII). Flush to holding area for dilution with more water.

DISPOSAL: Follow Federal, State and local regulations for disposal. Small spills and residues can be highly diluted with water and flushed to the drain. Large amounts may require partial or total decomposition of active oxygen in addition to dilution before discharge.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide general ventilation and local exhaust ventilation to meet TLV requirements. Local exhaust ventilation and/or hoods should be used where mist or vapors may be generated. Approved respirators and self-contained breathing apparatus must be available for non-routine and emergency use.

Prevent contact with the skin by use of gloves, apron, boots, etc., as required, of suitable protective material.

Chemical safety goggles and/or a face shield must be used for eye protection. An eyewash station and safety shower must be readily available.

Provide special training of employees working with H₂O₂ on body protection, emergency procedures and first aid.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in original container (or in approved container of compatible material) in a cool, fire resistant place, away from any combustibles, direct sunlight, catalytic metals, and sources of heat. A source of ample water must be available for handling spills. Protect containers from physical damage and from contamination. Do not return material to storage container after removal! Ventilation must be good. Containers must be covered and vented. Workers handling hydrogen peroxide must be specially trained for the assignment. Procedures must maintain the high purity of stored material. All equipment used to handle hydrogen peroxide solutions must be of approved composition and properly cleaned and passivated before use. Obtain and follow supplier recommendations. Avoid contact with any combustible materials.

DOT Classification - OXIDIZER (yellow label)

DATA SOURCE(S) CODE: 1,2,5-9,12,20

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