

HYDROGEN PEROXIDE SOLUTION, 35%

1. === Product Identification ===

Synonyms: Peroxide; 100 volume peroxide; Hydrogen dioxide solution; Hydrogen peroxide, 35%, unstabilized; Hydrogen Peroxide, 35%

CAS No.: 7722-84-1

Molecular Weight: 34.01

Chemical Formula: H₂O₂

2. === Composition/Information on Ingredients ===

Ingredient	CAS No	Percent	Hazardous
Hydrogen Peroxide	7722-84-1	35%	Yes
Water	7732-18-5	65%	No

3. === Hazards Identification ===

Emergency Overview

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.

Health Rating: 3 - Severe (Life)

Flammability Rating: 0 - None

Reactivity Rating: 3 - Severe (Oxidizer)

Contact Rating: 4 - Extreme (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:

Vapors are corrosive and irritating to the respiratory tract. Inhalation of mist may burn the mucous membrane of the nose and throat. In severe cases, exposures may result in pulmonary edema and death.

Ingestion:

Corrosive and irritating to the mouth, throat, and abdomen. Large doses may cause symptoms of abdominal pain, vomiting, and diarrhea as well as blistering or tissue destruction. Stomach distention (due to rapid liberation of oxygen), and risk of stomach perforation, convulsions, pulmonary edema, coma, possible cerebral edema (fluid on the brain), and death are possible.

Skin Contact:

Corrosive. Symptoms of redness, pain, and severe burn can occur.

Eye Contact:

Vapors are very corrosive and irritating to the eyes. Symptoms include pain, redness and blurred vision. Splashes can cause permanent tissue destruction.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion:

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse. If allowed to dry on clothing, evaporation leads to concentration and increased possibility of ignition.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician:

Pulmonary edema may be delayed for 24 to 72 hours; keep under observation. Gastric lavage may be necessary if swallowed. Analysis of body fluids (particularly gastric aspirates) using the titanium chloride reaction, if done immediately, will reveal peroxides.

5. Fire Fighting Measures**Fire:**

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Increases the flammability of combustible, organic and readily oxidizable materials.

Explosion:

Contact with oxidizable substances may cause extremely violent combustion. Drying of concentrated hydrogen peroxide on clothing or other combustible materials may cause fire or explosion. Sealed containers may rupture when heated.

Fire Extinguishing Media:

Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. === Accidental Release Measures ===

CAUTION! Caustic material. Causes fires with organic material. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Contain and recover liquid when possible. Do not return spilled material to original container. Larger Spills: Dilute with a large amount of water and hold in a pond or dyked area until the peroxide decomposes followed by discharge into a suitable treatment system. May be neutralized with sodium metabisulfite or sodium sulfite after diluting to 5-10% peroxide. Do not flush undiluted material to sewer. This oxidizing material can increase the flammability of adjacent combustible materials. Empty containers should be rinsed with water before discarding.

7. === Handling and Storage ===

Store in a cool (< 35C), well-ventilated dark area separated from combustible substances, reducing agents, strong bases, organics. Do not store on wooden shelves or floors. Suggest rotation of stock. Containers must be vented, but check periodically for bulging containers which can burst from pressure. Protect containers from physical damage, contamination, heat and incompatibles.. Contamination from any source (dust, metals) may cause rapid decomposition with generation of large quantities of oxygen gas and high pressures. Rinse empty containers thoroughly with clean water. Glass, polyethylene, stainless steel and aluminum are recommended materials for storage containers. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. === Exposure Controls /Personal Protection ===

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):

1 ppm (TWA).

-ACGIH Threshold Limit Value (TLV):

1 ppm (TWA), A3: Animal carcinogen.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work

area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. This substance has unknown warning properties.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. === Physical/Chemical Properties ===

Appearance:

Clear, colorless liquid.

Odor:

Slight acid odor.

Solubility:

Infinitely soluble.

Density:

1.11

pH:

3.3

% Volatiles by volume @ 21C (70F):

100

Boiling Point:

108C (226F)

Melting Point:

-25C (-13F)

Vapor Density (Air=1):

1.17

Vapor Pressure (mm Hg):

25 @ 30C (86F)

Evaporation Rate (BuAc=1):

< 1

10. === Stability and Reactivity Data ===

Stability:

Normally stable if uncontaminated, but slowly decomposes to release oxygen. Unstable with heat, may result in dangerous pressures. A strong oxidizer, reacts violently upon contact with

many organic substances, particularly textile and paper. Avoid light and keep in a closed but vented container to prevent evaporation (concentration) and contamination.

Hazardous Decomposition Products:

Decomposes to water and oxygen with rapid heat release. Use vented containers. The solution can decompose violently upon heating.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Heat, reducing agents, organic materials, dirt, alkalis, rust, and many metals. Spontaneous combustion may occur on standing in contact with readily flammable materials.

Conditions to Avoid:

Avoid excess heat and contact with combustible or organic materials. Light and incompatibles.

11. === Toxicological Information ===

For Hydrogen peroxide: No LD50/LC50 information found relating to normal routes of occupational exposure. Investigated as a tumorigen and mutagen.

Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
Hydrogen Peroxide (7722-84-1)	No	No	3
Water (7732-18-5)	No	No	None

12. === Ecological Information ===

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. === Disposal Considerations ===

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. === MSDS Transport Information ===

Domestic (Land, D.O.T.)

Proper Shipping Name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Hazard Class: 5.1, 8
UN/NA: UN2014
Packing Group: II
Information reported for product/size: 463LB

International (Water, I.M.O.)

Proper Shipping Name: HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Hazard Class: 5.1, 8
UN/NA: UN2014
Packing Group: II
Information reported for product/size: 463LB

15. === Regulatory Information ===

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Hydrogen Peroxide (7722-84-1)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Hydrogen Peroxide (7722-84-1)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient Catg.	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical
Hydrogen Peroxide (7722-84-1)	No	No	No	No
Water (7732-18-5)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8 (d)
Hydrogen Peroxide (7722-84-1)			
Water (7732-18-5)			

Hydrogen Peroxide (7722-84-1)
Water (7732-18-5)

No No No
No No No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: Yes Pressure: No
Reactivity: Yes (Mixture / Liquid)

Australian Hazchem Code: 2P

Poison Schedule: S6

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. === Other Information ===

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **1** Other: **Oxidizer**

Label Hazard Warning:

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.

Label Precautions:

Keep from contact with clothing and other combustible materials.

Do not store near combustible materials.

Do not get in eyes, on skin, or on clothing.

Do not breathe vapor or mist.

Store in a tightly closed container.

Use only with adequate ventilation.

Remove and wash contaminated clothing promptly.

Wash thoroughly after handling.

Avoid contamination from any source, metals, dust, and organic materials that may cause rapid decomposition, generation of large quantities of oxygen gas and high pressure. Drying of product on clothing or combustible materials may cause fire.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases get medical attention immediately.

Product Use:

Laboratory Reagent.