

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 2015/830 and US OSHA HCS 2015

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** 600051
Product Name: Cell-Based Assay Hydrogen Peroxide Standard
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Relevant identified uses: For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
Company Name: Cayman Chemical Company
 1180 E. Ellsworth Rd.
 Ann Arbor, MI 48108
Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
 CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:

Oxidizing Liquids, Category 1

Acute Toxicity: Inhalation, Category 4

Acute Toxicity: Oral, Category 4

Skin Corrosion/Irritation, Category 1A

2.2 Label Elements:



GHS Signal Word: **Danger**

GHS Hazard Phrases:

H271: May cause fire or explosion; strong oxidizer.

H302: Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H332: Harmful if inhaled.

GHS Precautionary Phrases:

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

P220: Keep away from combustible materials.

P260: Do not breathe {dust/fume/gas/mist/vapors/spray}.

P264: Wash {hands} thoroughly after handling.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

GHS Response Phrases:

P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P306+360: IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

P310: Immediately call a POISON CENTER or doctor/physician.

P330: Rinse mouth.

P363: Wash contaminated clothing before reuse.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Causes severe skin burns and eye damage.

Effects and Symptoms: Harmful if swallowed or by inhalation.

Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Medical Conditions Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be

Generally Aggravated By more susceptible to the effects of the substance.

Exposure:

Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
7722-84-1 MX0887000	Hydrogen peroxide 01-2119485845-22-0000	25.0 %	231-765-0 008-003-00-9	Ox. Liq. 1: H271 Acute Tox.(O) 4: H302 Skin Corr. 1A: H314 Acute Tox.(I) 4: H332
7732-18-5 ZC0110000	Water na	75.0 %	231-791-2 NA	No GHS classifications apply.

Section 4. First Aid Measures

4.1 Description of First Aid

Measures:

In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

4.2 Important Symptoms and Effects, Both Acute and Exposure may cause: nausea, headache, vomiting, stomach pains, sore throat, cough, dizziness, or shortness of breath.

Delayed: Eye contact may result in pain, redness, blurred vision, or corneal ulcer.

Skin contact may result in redness, itching, pain, severe burn, or vesiculation skin.

Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Media: Use water spray to cool fire-exposed containers.
Unsuitable Extinguishing A solid water stream may be inefficient.
Media:
- 5.2 Flammable Properties and Hazards:** Strong oxidizer - may intensify fire.
 No data available.
- Flash Pt:** No data.
- Explosive Limits:** LEL: No data. UEL: No data.
- Autoignition Pt:** No data.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

- 6.1 Protective Precautions, Protective Equipment and Emergency Procedures:** Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
- 6.2 Environmental Precautions:** Take steps to avoid release into the environment, if safe to do so.
- 6.3 Methods and Material For Containment and Cleaning Up:** Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure. Keep away from sources of ignition.
- 7.2 Precautions To Be Taken in Storing:** Keep away from heat, sparks, and flame. Keep container tightly closed. Store in accordance with information listed on the product insert.
- Other Precautions:** Keep away from combustible materials. Light sensitive.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Chemical Name	Jurisdiction	Recommended Exposure Limits	Notations
7722-84-1	Hydrogen peroxide	ACGIH TLV	TLV: 1 ppm	
		France VL	TWA: 1.5 mg/m3 (1 ppm)	
		OSHA PELs	PEL: 1 ppm	
		Britain EH40	TWA: 1.4 mg/m3 (1 ppm) STEL: 2.8 mg/m3 (2 ppm)	

8.2 Exposure Controls:

- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2 Personal protection equipment:

Eye Protection: Safety glasses
Protective Gloves: Compatible chemical-resistant gloves
Other Protective Clothing: Lab coat
Respiratory Equipment NIOSH approved respirator, as conditions warrant.
(Specify Type):
Work/Hygienic/Maintenance Practices: Do not take internally.
 Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
 Wash thoroughly after handling.
 No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: Gas Liquid Solid
Appearance and Odor: 25% solution of hydrogen peroxide
pH: No data.
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Flammability (solid, gas): No data available.
Explosive Limits: LEL: No data. UEL: No data.
Vapor Pressure (vs. Air or mm Hg): No data.
Vapor Density (vs. Air = 1): No data.
Specific Gravity (Water = 1): No data.
Solubility in Water: No data.
Octanol/Water Partition Coefficient: No data.
Autoignition Pt: No data.
Decomposition Temperature: No data.
Viscosity: No data.

9.2 Other Information

Percent Volatile: No data.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.
10.2 Stability: Unstable Stable
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
Polymerization: Will occur Will not occur
10.4 Conditions To Avoid: heat, flames, and sparks
10.5 Incompatibility - Materials To Avoid: brass
 copper
 iron and iron salts
 nickel
 oxidizable materials
 powdered metals
 zinc

10.6 Hazardous Decomposition or Byproducts: No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.
 Hydrogen peroxide - Toxicity Data: Oral LD50 (rabbit): 820 mg/kg; Oral LD50 (rat): 910 mg/kg; Skin LD50 (rat): 3 g/kg; Oral TDLO (woman): 1,200 mg/kg;
 Hydrogen peroxide - Irritation Data: Eyes (rabbit): 1 mg severe;

Chronic Toxicological Effects: Hydrogen Peroxide - Investigated as a mutagen.
 Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
 Hydrogen Peroxide RTECS Number: MX0900000, MX0899000, MX0888000, MX0899500, MX0890000, MX0887000

Carcinogenicity/Other Information: Hydrogen peroxide - IARC: Group 3: Not classifiable as to its carcinogenicity to humans;

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
7722-84-1	Hydrogen peroxide	n.a.	3	A3	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
 Runoff from fire control or dilution water may cause pollution.

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

12.6 Other adverse effects: No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Hydrogen peroxide, aqueous solution (with 20% or more but 40% or less hydrogen peroxide (stabilized as necessary))

DOT Hazard Class: 5.1 (8) OXIDIZER, CORROSIVE

UN/NA Number: UN2014 **Packing Group:** II





SAFETY DATA SHEET

Cell-Based Assay Hydrogen Peroxide Standard

Revision: 10/17/2019
Supersedes Revision: 12/06/2012**14.1 LAND TRANSPORT (European ADR/RID):**

ADR/RID Shipping Name: Hydrogen peroxide, aqueous solution (with 20% or more but 40% or less hydrogen peroxide (stablized as necessary))

UN Number: 2014 **Packing Group:** II

Hazard Class: 5.1 (8) - OXIDIZER,
CORROSIVE

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Hydrogen peroxide, aqueous solution (with 20% or more but 40% or less hydrogen peroxide (stablized as necessary))

UN Number: 2014 **Packing Group:** II

Hazard Class: 5.1 (8) - OXIDIZER, **IATA Classification:** 5.1 (8)
CORROSIVE

Additional Transport Information: Transport in accordance with local, state, and federal regulations.
When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10.
Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
7722-84-1	Hydrogen peroxide	Yes 1000 LB	Yes 1000 LB	No
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
7722-84-1	Hydrogen peroxide	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 10/17/2019

Additional Information About This Product: No data available.

Company Policy or Disclaimer: DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.