

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** Hydrogen Peroxide

**Other means of identification**

**Product No.:** 5803, 5170, 3664, V340, 2192, 2204, 2203, 2202, 2201, 2200, 2190, 2189, 2186, 5236, 5853, 5846, 5816, 2002, 5516, 5369, 5240, 5155, 37818, 37817, 37810, 2206

**Recommended use and restriction on use**

**Recommended use:** For Laboratory, Research or Manufacturing Use.

**Restrictions on use:** Not determined.

**Details of the supplier of the safety data sheet**

	Avantor Performance Materials, LLC 100 Matsonford Rd, Suite 200 Radnor, PA 19087
Telephone:	Customer Service: 855-282-6867
Fax:	
Contact Person:	Product Information Compliance
E-mail:	info@avantormaterials.com

**Emergency telephone number:**

CHEMTREC: 1-800-424-9300 within US and Canada

## 2. Hazard(s) identification

**Hazard Classification**

**Physical Hazards**

Oxidizing liquids	Category 2
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**Health Hazards**

Acute toxicity (Oral)	Category 4
Acute toxicity (Inhalation - vapor)	Category 3
Skin Corrosion/Irritation	Category 1
Serious Eye Damage/Eye Irritation	Category 1
Germ Cell Mutagenicity	Category 1B
Specific Target Organ Toxicity - Single Exposure	Category 1 <sup>1</sup>
Specific Target Organ Toxicity - Single Exposure	Category 3 <sup>2</sup>

**Target Organs**

- 1.Lungs
- 2.Respiratory tract irritation.

**Unknown toxicity - Health**

Acute toxicity, oral	0 %
Acute toxicity, inhalation, vapor	25 %

**Environmental Hazards**

Acute hazards to the aquatic environment Category 2

**Unknown toxicity - Environment**

Acute hazards to the aquatic environment	0 %
Chronic hazards to the aquatic environment	25 %

**Label Elements**

**Hazard Symbol:**



**Signal Word:** Danger

**Hazard Statement:** May intensify fire; oxidizer.  
Toxic if inhaled.  
Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause respiratory irritation.  
May cause genetic defects.  
Causes damage to organs if swallowed.  
Toxic to aquatic life.

**Precautionary Statements**

**Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat. - No smoking. Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Wash thoroughly after handling. Do not breathe dust/mist/vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Avoid release to the environment.

**Response:** In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction. IF exposed: Call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

**Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up.

**Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Other hazards which do not result in GHS classification:** None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	Content in percent (%)*
Hydrogen peroxide		7722-84-1	25 - 35%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First-aid measures

**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Call a physician or poison control center immediately. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Inhalation:** Move to fresh air. Call a physician or poison control center immediately. If breathing is difficult, give oxygen. Apply artificial respiration if victim is not breathing.

**Skin Contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

#### Most important symptoms/effects, acute and delayed

**Symptoms:** Harmful if swallowed. Toxic if inhaled. Corrosive to skin and eyes.

**Hazards:** None known.

#### Indication of immediate medical attention and special treatment needed

**Treatment:** Treat symptomatically. Symptoms may be delayed.

### 5. Fire-fighting measures

**General Fire Hazards:** Strong oxidizer - contact with other material may cause fire.

#### Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Water spray, foam, dry powder or carbon dioxide.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** Strong oxidizer. Contact with combustible material may cause fire. Pressurized container may explode when exposed to heat or flame.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Use water spray to keep fire-exposed containers cool. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Use personal protective equipment. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Methods and material for containment and cleaning up:** In case of leakage, eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

**Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

**Environmental Precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage**

**Precautions for safe handling:** Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Wash hands thoroughly after handling. Do not get in eyes, on skin, on clothing. Keep away from combustible material. Do not taste or swallow. Do not eat, drink or smoke when using the product. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight.

**Conditions for safe storage, including any incompatibilities:** Keep away from heat. Keep away from sources of ignition - No smoking. Keep away from combustible material. Keep container tightly closed. Store in a well-ventilated place. Store in a dry place.

**8. Exposure controls/personal protection**

**Control Parameters**

**Occupational Exposure Limits**

Chemical Identity	Type	Exposure Limit Values	Source
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Hydrogen peroxide	TWA	1 ppm 1,4 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Hydrogen peroxide	TWA	1 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Hydrogen peroxide	TWA	1 ppm	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
Hydrogen peroxide	TWA	1 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Hydrogen peroxide	8 HR ACL	1 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	2 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Hydrogen peroxide	TWA	1 ppm 1,4 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Hydrogen peroxide	TWA	1 ppm	US. ACGIH Threshold Limit Values (2011)

**Appropriate Engineering Controls** No data available.

#### Individual protection measures, such as personal protective equipment

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles) and a face shield.

#### Skin Protection

**Hand Protection:** Chemical resistant gloves

**Other:** Wear appropriate clothing to prevent reasonably probable skin contact.

**Respiratory Protection:** In case of inadequate ventilation use suitable respirator. Chemical respirator with acid gas cartridge.

**Hygiene measures:** Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

## 9. Physical and chemical properties

### Appearance

**Physical state:** Liquid  
**Form:** Liquid  
**Color:** Colorless

**Odor:** Mild pungent

**Odor threshold:** No data available.

**pH:** 3,3

**Melting point/freezing point:** -25 °C

**Initial boiling point and boiling range:** 108 °C

**Flash Point:** Not applicable

**Evaporation rate:** < 1 (butyl acetate=1)

<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	No data available.
<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	3,33 kPa
<b>Vapor density:</b>	1,17
<b>Density:</b>	1,11 g/ml (20 °C)
<b>Relative density:</b>	1,11 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	Miscible with water.
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.

**10. Stability and reactivity**

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical Stability:</b>	Stable; however, may decompose if heated.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid:</b>	Heat. Light. Contact with combustibles. Contact with incompatible materials.
<b>Incompatible Materials:</b>	Organic compounds. Reducing agents. Flammable/combustible material.
<b>Hazardous Decomposition Products:</b>	May decompose upon heating to produce corrosive and/or toxic fumes.

**11. Toxicological information**

**Information on likely routes of exposure**

<b>Inhalation:</b>	May cause irritation to the respiratory system.
<b>Skin Contact:</b>	Causes severe skin burns.
<b>Eye contact:</b>	Causes serious eye damage.
<b>Ingestion:</b>	May cause burns of the gastrointestinal tract if swallowed.

**Information on toxicological effects**

**Acute toxicity (list all possible routes of exposure)**

<b>Oral</b>	
<b>Product:</b>	ATEmix (Rat): 1.982 mg/kg
<b>Dermal</b>	
<b>Product:</b>	No data available.

**Specified substance(s):**  
Hydrogen peroxide      LD 50 (Rat): 4.060 mg/kg

**Inhalation**  
**Product:**      No data available.

**Specified substance(s):**  
Hydrogen peroxide      LOAEL (Rat): 2 mg/l  
LC 50 (Rat): > 170 mg/m3

**Repeated dose toxicity**  
**Product:**      No data available.

**Skin Corrosion/Irritation**  
**Product:**      Causes skin burns.

**Serious Eye Damage/Eye Irritation**  
**Product:**      Causes eye burns.

**Respiratory or Skin Sensitization**  
**Product:**      Not a skin sensitizer.

**Carcinogenicity**  
**Product:**      Suspected of causing cancer.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**  
No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**  
No carcinogenic components identified

**ACGIH Carcinogen List:**  
No carcinogenic components identified

**Germ Cell Mutagenicity**

**In vitro**  
**Product:**      May cause genetic defects.

**In vivo**  
**Product:**      May cause genetic defects.

**Reproductive toxicity**  
**Product:**      No components toxic to reproduction

**Specific Target Organ Toxicity - Single Exposure**  
**Product:**      Lungs. Respiratory tract irritation.

**Specific Target Organ Toxicity - Repeated Exposure**  
**Product:**      None known.

**Aspiration Hazard**  
**Product:**      Not classified

**Other effects:**      None known.

**12. Ecological information**

**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Specified substance(s):**

Hydrogen peroxide NOAEL (Pimephales promelas, 96 h): 5 mg/l  
LC 50 (Pimephales promelas, 96 h): 16,4 mg/l  
LC 50 (Ictalurus punctatus, 96 h): 37,4 mg/l

**Aquatic Invertebrates**

**Product:** No data available.

**Chronic hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Persistence and Degradability**

**Biodegradation**

**Product:** Expected to be readily biodegradable.

**BOD/COD Ratio**

**Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration Factor (BCF)**

**Product:** No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** No data available.

**Mobility in soil:** The product is water soluble and may spread in water systems.

**Other adverse effects:** Toxic to aquatic life.

**13. Disposal considerations**

**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws.

**Contaminated Packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.



## 14. Transport information

### TDG

UN Number:	UN 2014
UN Proper Shipping Name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Transport Hazard Class(es)	
Class:	5.1
Label(s):	5.1, 8
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.

### IMDG

UN Number:	UN 2014
UN Proper Shipping Name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION (WITH 20% - 60% HYDROGEN PEROXIDE)
Transport Hazard Class(es)	
Class:	5.1
Label(s):	5.1, 8
EmS No.:	F-H, S-Q
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.

### IATA

UN Number:	UN 2014
UN Proper Shipping Name:	Hydrogen peroxide, aqueous solution
Transport Hazard Class(es):	
Class:	5.1
Label(s):	5.1, 8
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.
Cargo aircraft only:	Allowed.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable

## 15. Regulatory information

### Canada Federal Regulations

#### List of Toxic Substances (CEPA, Schedule 1)

Not Regulated

#### Export Control List (CEPA 1999, Schedule 3)

Not Regulated

#### National Pollutant Release Inventory (NPRI)

##### Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements

NPRI PT5 Not Regulated

##### Canada. National Pollutant Release Inventory (NPRI) (Schedule 1, Parts 1-4)

NPRI Not Regulated

### Greenhouse Gases

Not Regulated

### Controlled Drugs and Substances Act

CA CDSI Not Regulated

CA CDSII	Not Regulated
CA CDSIII	Not Regulated
CA CDSIV	Not Regulated
CA CDSV	Not Regulated
CA CDSVII	Not Regulated
CA CDSVIII	Not Regulated

**Precursor Control Regulations**  
Not Regulated

**International regulations**

**Montreal protocol**  
Not applicable

**Stockholm convention**  
Not applicable

**Rotterdam convention**  
Not applicable

**Kyoto protocol**  
Not applicable

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Mexico INSQ:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory

**16. Other information, including date of preparation or last revision**

<b>Revision Date:</b>	21.12.2018
<b>Version #:</b>	1.2
<b>Source of information:</b>	Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.
<b>Further Information:</b>	No data available.

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