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

Recommended use and restriction on use

Recommended use: Not available.
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name:	Avantor Performance Materials, Inc.
Address:	3477 Corporate Parkway, Suite 200 Center Valley, PA 18034
Telephone:	
	Customer Service: 855-282-6867
Fax:	
Contact Person:	Environmental Health & Safety
e-mail:	info@avantormaterials.com

Emergency telephone number:
24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Physical hazards

Oxidizing liquids	Category 2

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
Specific target organ toxicity - single exposure	Category 3

Environmental hazards

Acute hazards to the aquatic environment	Category 2

_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 statement

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/Store away from clothing/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): Remove/take off immediately all contaminated clothing. Rinse skin with water/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 victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

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 identity	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.

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 MSDS 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: Eliminate all ignition sources if safe to do so. 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
HYDROGEN PEROXIDE	TWA	1 ppm	US. ACGIH Threshold Limit Values (2011)
	REL	1 ppm 1.4 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	1 ppm 1.4 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	1 ppm 1.4 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

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)
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	3.33 kPa
Vapor density:	1.17
Relative density:	1.11 (20 °C)
Solubility(ies)	
Solubility in water:	Miscible with water.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical stability:	Stable; however, may decompose if heated.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat. Light. Contact with combustibles. Contact with incompatible materials.
Incompatible materials:	Organic compounds. Reducing agents. Flammable/combustible material.

Hazardous decomposition products: May decompose upon heating to produce corrosive and/or toxic fumes.

11. Toxicological information

Information on likely routes of exposure

Ingestion: May cause burns of the gastrointestinal tract if swallowed.

Inhalation: May cause irritation to the respiratory system.

Skin contact: Causes severe skin burns.

Eye contact: Causes serious eye damage.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: No data available.

Dermal
Product: LD 50 (Rat, Male): 1,193 mg/kg

LD 50 (Rat, Female): 1,270 mg/kg

Inhalation
Product: No data available.

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

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
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	LC 50 (Chameleon goby (Tridentiger trigonocephalus), 24 h): 155 mg/l Mortality LC 50 (Jack Mackerel (Trachurus japonicus), 24 h): 89 mg/l Mortality

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

DOT

UN number:	UN 2014
UN proper shipping name:	Hydrogen peroxide, aqueous solutions
Transport hazard class(es)	
Class(es):	5.1, 8
Label(s):	5.1, 8
Packing group:	II
Marine Pollutant:	No

IMDG

UN number:	UN 2014
UN proper shipping name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Transport hazard class(es)	
Class(es):	5.1, 8
Label(s):	5.1, 8
EmS No.:	F-H, S-Q
Packing group:	II
Marine Pollutant:	No

IATA

UN number:	UN 2014
Proper Shipping Name:	Hydrogen peroxide, aqueous solution
Transport hazard class(es):	
Class(es):	5.1, 8
Label(s):	5.1, 8
Marine Pollutant:	No
Packing group:	II

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

X	Acute (Immediate)	X	Chronic (Delayed)	X	Fire	X	Reactive		Pressure Generating

SARA 302 Extremely hazardous substance

Chemical identity	RQ	Threshold Planning Quantity
HYDROGEN PEROXIDE	1000 lbs.	1000 lbs.

SARA 304 Emergency release notification

Chemical identity	RQ
HYDROGEN PEROXIDE	

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
HYDROGEN PEROXIDE	500lbs

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

HYDROGEN PEROXIDE Listed

US. Massachusetts RTK - Substance List

HYDROGEN PEROXIDE Listed

US. Pennsylvania RTK - Hazardous Substances

HYDROGEN PEROXIDE Listed

US. Rhode Island RTK

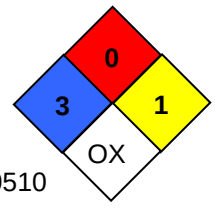
HYDROGEN PEROXIDE Listed

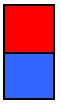
Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory
EU No Longer Polymers List:	Not 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
Canada NDSL Inventory:	Not 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
Switzerland Consolidated Inventory:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	On or in compliance with the inventory

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

NFPA Hazard ID





Flammability

Health



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
OXY: Oxidizer

Issue date:	06-11-2014
Revision date:	No data available.
Version #:	1.1
Further information:	No data available.
Disclaimer:	THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED “AS IS,” AND AVANTOR PERFORMANCE MATERIALS MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION<(>,<)> WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, AVANTOR PERFORMANCE MATERIALS ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. AVANTOR PERFORMANCE MATERIALS REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.