



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	HYDROGEN PEROXIDE
Version #	04
Revision date	04-11-2011
CAS #	Mixture
Product Codes	J.T.Baker: 2002, 2186, 2189, 2190, 2191, 2192, 2200, 2201, 2202, 2203, 2204, 3664, 5155, 5170, 5369, 5516, 5803, 5816, 5846, 5853, 5898 Macron: 5236, 5240, H021, V340
Synonym(s)	Peroxide; 100 volume peroxide * Hydrogen dioxide solution * Hydrogen peroxide, 30%, unstabilized * Hydrogen Peroxide, 30%, Ultrex®
Manufacturer	Avantor Performance Materials, Inc.
Address	222 Red School Lane Phillipsburg, NJ 08865 US
Customer Service	800-582-2537
24 Hour Emergency	908-859-2151
Chemtec	800-424-9300

2. Hazards Identification

Emergency overview	DANGER -- OXIDIZER Oxidizing material. Contact with combustible material may cause fire. Corrosive. Causes skin and eye burns. Causes digestive tract burns. Harmful if inhaled or swallowed. Mist or vapor irritating to eyes and respiratory tract. Prolonged exposure may cause chronic effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Ingestion. Inhalation. Skin contact. Eye contact.
Eyes	Corrosive. Causes eye burns. Vapor or spray may cause eye damage, impaired sight or blindness.
Skin	Corrosive. Causes skin burns.
Inhalation	Harmful if inhaled. Causes burns. Vapors irritate the respiratory system, and may cause coughing and difficulties in breathing.
Ingestion	Corrosive. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Target organs	Eyes. Skin. Lungs. Respiratory system.
Chronic effects	Strongly irritating. Prolonged contact may cause burns. Contains a substance which may have a mutagenic effect.
Potential environmental effects	Toxic to aquatic organisms.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
HYDROGEN PEROXIDE	7722-84-1	25 - 35
Non-hazardous components	CAS #	Percent
WATER	7732-18-5	65 - 75

4. First Aid Measures

First aid procedures

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.
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 clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.
Inhalation	Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Notes to physician

Keep victim under observation. Treat symptomatically.

General advice

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this safety data sheet to the doctor in attendance. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties

This product is not flammable.

Extinguishing media

Suitable extinguishing media	Water. Carbon dioxide (CO ₂). Dry chemical powder. Foam.
Unsuitable extinguishing media	None known.

Protection of firefighters

Specific hazards arising from the chemical	OXIDIZING! May explode from heat or contamination. Contact with combustible material may cause fire. These substances will accelerate burning when involved in a fire. Some will react explosively with hydrocarbons (fuels). Some may decompose explosively when heated or involved in a fire. Runoff may create fire or explosion hazard. Fire may produce irritating, corrosive and/or toxic gases.
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Protective equipment and precautions for firefighters

Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

Specific methods

In the event of fire and/or explosion do not breathe fumes.

6. Accidental Release Measures

Personal precautions

Eliminate all sources of ignition. Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Methods for containment

Stop the flow of material, if this is without risk. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up

Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Absorb spillage with non-combustible, absorbent material. Collect in a non-combustible container for prompt disposal. Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations. Collect in a non-combustible container for prompt disposal.

7. Handling and Storage

Handling

Keep away from clothing and other combustible materials. Do not get in eyes, on skin, on clothing. Avoid prolonged exposure. Do not taste or swallow. Wash thoroughly after handling. 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.

Storage

Keep away from heat and sources of ignition. Do not store near combustible materials. Keep tightly closed in a dry, cool and well-ventilated place.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components

Type

Value

HYDROGEN PEROXIDE (7722-84-1)

TWA

1.0000 ppm

U.S. - OSHA

Components

Type

Value

HYDROGEN PEROXIDE (7722-84-1)

PEL

1.0000 ppm
1.4000 mg/m3

Engineering controls

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.

Personal protective equipment

Eye / face protection

Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with acid gas cartridge.

General hygiene considerations

Provide eyewash station and safety shower. Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

General

Wear chemical protective equipment that is specifically recommended by the manufacturer. Launder contaminated clothing before reuse.

9. Physical & Chemical Properties

Appearance

Clear.

Color

Colorless.

Odor

Slight. Pungent.

Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	3.3
Melting point	-13 °F (-25 °C)
Freezing point	-13 °F (-25 °C)
Boiling point	226.4 °F (108 °C)
Flash point	Not available.
Evaporation rate	<= 1 BuAc
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	3.33 kPa
Vapor density	1.17
Specific gravity	1.11
Relative density	Not available.
Solubility (water)	Miscible
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Molecular weight	34.01
Molecular formula	H ₂ O ₂

10. Chemical Stability & Reactivity Information

Chemical stability	Stable, however, may decompose if heated.
Conditions to avoid	Heat. Light. Organic compounds. Contact with combustibles.
Incompatible materials	Heat. Organic compounds. Reducing agents.
Hazardous decomposition products	May decompose upon heating to produce corrosive and/or toxic fumes.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product

HYDROGEN PEROXIDE (Mixture)

Test Results

Acute Dermal LD50 Rat: 3000 mg/kg
 Acute Inhalation LC50 Rat: 6667 mg/m³
 Acute Oral LD50 Rat: 1253 mg/kg

Components

HYDROGEN PEROXIDE (7722-84-1)

Test Results

Acute Inhalation LC50 Rat: 2000 mg/m³ 4.00 hours
 Acute Oral LD50 Rat: 376 mg/kg

Sensitization	Not a skin sensitizer.
Acute effects	Harmful if inhaled or swallowed.
Local effects	Causes skin and eye burns. Irritating to respiratory system.
Chronic effects	Strongly irritating. Prolonged contact may cause burns.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

ACGIH Carcinogens

HYDROGEN PEROXIDE (CAS 7722-84-1)

A3 Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

HYDROGEN PEROXIDE (CAS 7722-84-1)

3 Not classifiable as to carcinogenicity to humans.

Skin corrosion/irritation	Causes skin burns.
Epidemiology	No epidemiological data is available for this product.
Mutagenicity	May cause genetic defects.
Neurological effects	No data available for this product.
Reproductive effects	Contains no ingredient listed as toxic to reproduction
Teratogenicity	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Symptoms and target organs	Corrosive effects.
Further information	Danger of very serious irreversible effects. Symptoms may be delayed.

12. Ecological Information**Ecotoxicological data****Components****Test Results**

HYDROGEN PEROXIDE (7722-84-1)

EC50 Algae: 2.5 mg/l 72.00 hours

EC50 Daphnia: 2.4 mg/l 48.00 hours

LC50 Fish: 16.4 mg/l 96.00 hours

NOEC Daphnia: 1 mg/l 48.00 hours

Ecotoxicity	Toxic to aquatic life.
Persistence and degradability	Expected to be readily biodegradable.
Partition coefficient (n-octanol/water)	Not available

13. Disposal Considerations

Disposal instructions	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

14. Transport Information**DOT****Basic shipping requirements:**

UN number	UN2014
Proper shipping name	Hydrogen peroxide, aqueous solutions
Hazard class	5.1
Subsidiary hazard class	8
Packing group	II

Additional information:**Special provisions** 12, B53, B80, B81, B85, IB2, T7, TP2, TP6, TP24, TP37**Basic shipping requirements:**

Labels required	5.1, 8
Additional information:	
Packaging exceptions	None
Packaging non bulk	202

Packaging bulk 243
ERG number 140

IATA

Basic shipping requirements:

UN number 2014
Proper shipping name Hydrogen peroxide, aqueous solution with 20% or more but 40% or less hydrogen peroxide
Hazard class 5.1
Subsidiary hazard class 8
Packing group II
Additional information:
ERG code 5C

IMDG

Basic shipping requirements:

UN number 2014
Proper shipping name HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide
Hazard class 5.1
Subsidiary hazard class 8
Packing group II



DOT



IATA



IMDG

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

HYDROGEN PEROXIDE (CAS 7722-84-1) 1000 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity

HYDROGEN PEROXIDE (CAS 7722-84-1) 1000 LBS

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - Yes

Section 311 hazardous chemical Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

HYDROGEN PEROXIDE (CAS 7722-84-1) 500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

HYDROGEN PEROXIDE (CAS 7722-84-1) Listed.

Saf-T-Data
Health: 3 - Severe (Life)
Flammability: 0 - None
Reactivity: 3 - Severe (Oxidizer)
Contact: 4 - Extreme (Corrosive)
Lab Protective Equip: D - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: W - White (Corrosive)

16. Labeling Info

Label Hazard Warning DANGER -- OXIDIZER
Contact with combustible material may cause fire. Corrosive. Causes severe skin and eye burns. Causes digestive tract burns. Irritating to respiratory system.

Label Precautions Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed. Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly.

Label First Aid Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance.

17. Other Information

NFPA ratings
Health: 3
Flammability: 0
Instability: 1
Special hazards: OX

Disclaimer

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This data sheet contains changes from the previous version in section(s):

This document has undergone significant changes and should be reviewed in its entirety.