MATERIAL SAFETY DATA SHEET

HYPROX™200-400 HYDROGEN PEROXIDE

EVONIK INDUSTRIES

Material no.	99,002,321	Version	1.37 / US
Specification	140616	Revision date	05/06/2014
Order Number	03,862,443	Print Date	01/04/2015
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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Trade name	:	HYPROX™200-400 HYDROGEN PEROXIDE
Use of the Substance / Preparation	:	For industrial use
Function		For oxidation
Company	:	Evonik Corporation USA 299 Jefferson Road Parsippany,NJ 07054-0677 USA
Telephone	:	973-929-8000
Telefax	:	973-929-8040
US: CHEMTREC EMERGENCY NUMBER	:	800-424-9300
CANADA: CANUTEC EMERGENCY NUMBER	:	613-996-6666
Product Regulatory Services	:	973-929-8060

2. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

***Form**-liquid* ***Color**-colourless, clear* **Odor**-*stinging*

Product is a strong oxidizing agent.
Danger of decomposition under influence of heat.
Risk of decomposition in contact with incompatible substances, impurities, metals, alkalis, reducing agents.
Risk of explosion with organic solvents.
see also section 10.

Contact with combustible material may cause fire.
Corrosive.
Causes skin and eye burns.
Causes burns if swallowed.
Causes respiratory tract irritation.
May be harmful if swallowed.
May be harmful if inhaled.

Eye contact

Corrosive. May cause burns resulting in permanent damage.
Causes conjunctivitis and corneal damage.

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May cause eye injury - effects may be delayed.

Skin Contact

Corrosive. May cause burns resulting in permanent damage.
Prolonged exposure may cause severe irritation and white discoloration. Burning may result in localized erythema (redness) or even blistering of the skin.

Inhalation

Inhalation of vapors or aerosols are severely irritating to the respiratory tract and may cause inflammation and pulmonary edema.
Delayed symptoms may occur

Ingestion

May be harmful if swallowed.
Expected to cause burns to the gastrointestinal tract.
Ingestion of high concentrations causes rapid release of oxygen which may expand the esophagus or stomach resulting in severe damage (bleeding, ulceration or perforation).
Risk of gastric embolism!
Aspiration hazard if swallowed - can enter lungs and cause damage.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

aqueous solution, clear

Information on ingredients / Hazardous components

Hydrogen peroxide			
CAS-No.	7722-84-1	Percent (Wt./Wt.)	>= 20 - <= 40 %

Other information

This material is classified as hazardous under OSHA regulations.

See Section 8 for Exposure Guidelines

4. FIRST AID MEASURES

General advice

Pay attention to self-protection.
Remove victims from hazardous area. Immediately remove soiled or soaked clothing and remove it to a safe distance. Keep victim warm, in a stabilized position and covered.
Do not leave victims unattended.
If the casualty is unconscious: Place the victim in the recovery position.

Inhalation

Potential for exposure by inhalation if aerosols or mists are generated.
Move victims into fresh air.
With labored breathing: Provide with oxygen. Consult a doctor.
If the casualty is not breathing: Perform mouth-to-mouth resuscitation, notify emergency physician immediately.

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Skin contact

Wash off affected area immediately with plenty of water for at least 15 minutes.
If symptoms persist, consult a physician for treatment.

Eye contact

With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes.
Consult an ophthalmologist immediately if the symptoms persist.
When dealing with caustic substances, notify emergency physician immediately (key words: burns in eye).

Ingestion

Rinse out mouth.
Immediately give large quantities of water to drink.
Consult a physician immediately.
When dealing with caustic substances, notify emergency physician immediately.

Notes to physician

The initial focus is only on the local action, characterized by quickly progressing deep tissue damage.
In the eye, caustic/ irritating and harmful liquids cause, depending on the intensity of exposure, various levels of irritation, destruction, and ablation of the epithelium of the conjunctiva and cornea, corneal clouding, edema and ulcerations.
Danger! Possible loss of eyesight!
Superficial irritations and damage up to ulcerations and scarring develop on the skin.
After accidental absorption in the body, the pathology and clinical findings are dependent on the kinetics of the substance (quantity of absorbed substance, the absorption time, and the effectiveness of early elimination measures (first aid)/ excretion - metabolism).
A specific action of the substance is unknown.
In case of substances with high water solubility, irritations up to formation of necrosis in the upper respiratory tract may result after inhalation of caustic/ irritating aerosols and mists.
The initial focus is on the local action: signs of irritation of the respiratory tract such as coughing, burning behind the sternum, tears, burning in the eyes or nose.
There is a risk of pulmonary edema!

5. FIRE-FIGHTING MEASURES

Flash point	Not combustible.
Lower explosion limit	No data available
Upper explosion limit	No data available

Suitable extinguishing media

water spray, Adapt fire-extinguishing measures to surroundings, foam, dry powder, carbon dioxide (CO_2)

Extinguishing media which must not be used for safety reasons

organic compounds

Specific hazards during fire fighting

Product is fire-stimulating. Contact with the following substances may cause inflammation: flammable substances. The product itself does not burn.
Involved in fire, it may decompose yielding oxygen. Risk of overpressure and burst due to decomposition in confined spaces and pipes. Release of oxygen may support combustion.

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Strong oxidizer. Contact with combustible materials may cause a fire. Contact with incompatible materials (e.g. metals, alkalis, and reducing agents) will cause hazardous decomposition resulting in the release of large quantities of heat, steam, and oxygen gas. Danger of decomposition under influence of heat. Lower Explosive Limit: Hydrogen Peroxide vapors >40% by weight (or 26% mol). This product spontaneously decomposes above 150 degrees celcius. A severe detonation hazard may exist when mixed with organic liquids, e.g. kerosene or gasoline.

Hydrogen Peroxide itself is not flammable. Drying of product on clothing or combustible materials such as paper, fabrics, leather, and wood may cause fire. Mixtures of Hydrogen Peroxide with flammable liquids (solvents) may possess explosive properties. Contamination can cause rapid decomposition, release of oxygen and pressure.

Hydrogen Peroxide in the proximity of an ongoing fire must be diluted with large volumes of water.

Special protective equipment for fire-fighters

In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

Further information

Evacuate personnel to safe areas. Keep out unprotected persons. Keep unauthorized persons away. With large-scale fire, violent decomposition or even explosion is possible. In the case of fire, cool the containers that are at risk with water or dilute with water (flooding). or In case of fire, remove the endangered containers and bring to a safe place, if this can be done safely.
Stay upwind; keep out of low areas. Containers can build up pressure if exposed to heat (fire). Cool with water spray. As in any fire, wear self-contained, pressure-demand breathing apparatus (MSHA-NIOSH approved or equivalent) and full protective gear. Use water spray or fog to knock down irritating vapor.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Product causes chemical burns.

Evacuate personnel to safe areas.

Keep out unprotected persons.
Keep unauthorized persons away.

Environmental precautions

Observe regulations on prevention of water pollution (check, dam up, cover up).
Dam with sand or earth
Do not use: textiles, saw dust, combustible substances.
Do not permit to enter into surface water, stretches of water, soil undiluted.

Methods for cleaning up

In case of larger quantities:
Collect product in suitable containers (e. g. made of plastic) using appropriate equipment (e. g. liquid pump).
Keep away from flammable substances.
Keep away from incompatible substances.
Rinse away any residue with plenty of water.
Dispose of absorbed material in accordance with the regulations.
With small amounts:
Dilute product with lots of water and rinse away.
or
Absorb with liquid-binding material, e. g.: diatomaceous earth or universal binder.
Pick up mechanically. Collect in suitable containers.
Clean contaminated surface thoroughly.

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Pack and label wastes like the pure substance. Do not detach label from the delivery containers prior to disposal.

Additional advice

Make safe or remove all sources of ignition.
Shut off leak, if possible and safe to do.
Isolate defective containers immediately, if possible and safe to do.
Place defective containers in waste receptacle (waste packaging receptacle) made of plastic (not metal).
Do not seal defective containers or waste receptacles airtight (danger of bursting due to product decomposition).
Never return spilled product into its original container for re-use. (Risk of decomposition.).

Never return spilled product into its original container. Never put spilled material into another container for disposal. Dilute with large amounts of water to a concentration of about 5% Hydrogen Peroxide; hold in diked area or pond until peroxide is completely decomposed or dispose of according to all relevant local, provincial, state, and federal laws and regulations. Ventilate area. Use personal protective equipment as described in section 8. If necessary, contact supplier for recommendations to decompose dilute peroxide (5%).

SPONTANEOUS COMBUSTION HAZARD: Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood, or other combustibles, can cause the material to ignite and result in a fire.

7. HANDLING AND STORAGE

Handling

Safe handling advice

Handle in accordance with good industrial hygiene and safety practices.
Avoid impurities and heat effect.
Ensure there is good room ventilation.

Avoid contact with skin, eyes and clothing.

Do not inhale vapour, aerosols, mist.
Wear personal protective equipment.
Immediately change moistened and saturated work clothes.
Immediately rinse contaminated or saturated clothing with water.

Provide for installation of emergency shower and eye bath.

Set up safety and operation procedures.
Never return spilled product into its original container for re-use. (Risk of decomposition.).

Advice on protection against fire and explosion

Avoid sun rays, heat, heat effect.
Keep away from sources of ignition - No smoking.
Keep away from flammable substances.
Keep away from incompatible substances.

Storage

Requirements for storage areas and containers

cool, dry, clean.
well ventilated
jointless smooth concrete floor

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Recommendation: Acid-proof floor.
Only use containers which are specially permitted for: hydrogen peroxide
and/or
For transport, storage and tank installations only use suitable materials.
Use adequate venting devices on all packages, containers and tanks and check correct operation periodically.
Do not confine product in unvented vessels or between closed valves.
Risk of overpressure and burst due to decomposition in confined spaces and pipes.
Packages, containers and tanks should regularly be checked by visual observation for any sign of abnormality, e.g. corrosion, exert pressure (bulging), temperature increase etc.
Transport and store container in upright position only.
Always close container tightly after removal of product.
Do not keep the container sealed.
Ensure tightness at all times. Avoid leackage.
Avoid residues of the product on the containers.

Suitable materials	stainless steel 304L or 316L passivated
Suitable materials	aluminium magnesium alloys, passivated
Suitable materials	aluminium 5254 or 1060: min. 99.5 % passivated
Suitable materials	polyethylene, polypropylene, polyvinyl chloride (PVC),
Suitable materials	polytetrafluoroethylene
Suitable materials	glass, ceramics.
Unsuitable materials	iron, mild steel, copper, Bronze, brass, zinc, tin

Keep away from heat. Store in a cool, dry place. Keep container closed when not in use.
Consult NFPA 400 for storage area guidance. Storage and handling designs should be arranged in consultation with a person experienced in these types of assessments.
Do not store together with: combustible material

Further information

Measures for storing in tank installations. These should include at least:
Compatible materials, adequate separation, adequate venting area, venting devices, temperature measurement, earthing (grounding), bund in case of leakage.
Prior to the first filling and operation of a tank installation all parts of the facility including all pipes must be thoroughly cleaned and flushed through.
Metal elements of the installation must first be pickled and passivated sufficiently.

For detailed information on design specifications for the construction of tank- and dosing installations ask the producer for advice.

Regularly verify the availability of water to deal with emergencies (for cooling, tank flooding, fire fighting) and check correct operation periodically.

Advice on common storage

Do not store together with: alkalis, reductants, metallic salts (risk of decomposition).

Do not store together with: inflammable substances (risk of fire).

Do not store together with: organic solvents (risk of explosion).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component occupational exposure guidelines

- **Hydrogen peroxide**

CAS-No. 7722-84-1

Control parameters	1 ppm	Time Weighted Average (TWA) (ACGIH)
	1 ppm	PEL (OSHA Z1)

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1.4 mg/m3	
1 ppm	Time Weighted Average (TWA)
1.4 mg/m3 as H2O2	Permissible Exposure Limit (PEL):(US CA OEL)

Other information

Suitable measuring processes are:

OSHA method ID 006

OSHA method VI-6

Engineering measures

Ensure suitable suction/aeration at the work place and with operational machinery.
Provide for installation of emergency shower and eye bath.

Occupational exposure controls

Suitable measuring processes are:
OSHA method ID 006
OSHA method VI-6

Personal protective equipment

Respiratory protection

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

If workplace exposure limit is exceeded apply Respiratory protective equipment.

If open handling is unavoidable:
Wear respiratory protection.
If necessary: Provide with fresh air.
If necessary: Local ventilation.
When handling for a short time:
3M recommends the 3M 6003 Organic Vapor/Acid Gas Cartridge, the 3M 6006 Multi-Gas/Vapor Cartridge, and equivalent cartridges or combination versions of these be used for H2O2 for concentrations up to ~ 90ppm.
in the event of prolonged exposure during handling:
wear a self contained respiratory apparatus

Note time limit for wearing respiratory protective equipment.

Hand protection

Glove material	butyl-rubber, for example: Butoject 898, Kächele-Cama Latex GmbH (KCL), Germany
Material thickness	0.7 mm
Break through time	> 480 min
Method	DIN EN 374
Glove material	Natural rubber (NR), for example: Combi-Latex 395, Kächele-Cama Latex GmbH (KCL), Germany
Material thickness	1 mm
Break through time	< 120 min
Method	DIN EN 374

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Glove material	Nitrile, for example, Camatril (731), Kächele-Cama Latex GmbH (KCL), Germany
Material thickness	0.33 mm
Break through time	< 30 min
Method	DIN EN 374

The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.

Eye protection

Use chemical splash goggles and face shield.

Skin and body protection

Wear protective clothing, acid-proof.
Suitable materials are:
PVC, neoprene, nitrile rubber (NBR), rubber.
Rubber or plastic boots.

Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required.

A safety shower and eye wash fountain should be readily available.

To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

Hygiene measures

Do not inhale vapour, aerosols, mist.
Avoid contact with skin, eyes and clothing.
Ensure there is good room ventilation.
The work-place related airborne concentrations have to be kept below of the indicated exposure limits. If the limits at the workplace are exeeded and/or larger amounts are released (leakage, spilling, etc.) the indicated respiratory protection should be used.

No eating, drinking, smoking, or snuffing tobacco at work.

Wash face and/or hands before break and end of work.
preventive skin protection

Avoid contaminating clothes with product.

Immediately change moistened and saturated work clothes.
Immediately rinse contaminated or saturated clothing with water.
Any contaminated protective equipment is to be cleaned after use.

Protective measures

Handle in accordance with good industrial hygiene and safety practices.
Wear suitable protective clothing, gloves and eye/face protection.
Avoid protective gloves, clothes and shoes made from the following materials:
Leather

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Completely submerge hydrogen peroxide contaminated clothing or other materials in water prior to drying. Residual hydrogen peroxide, if allowed to dry on materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Color	colourless, clear
Odor	stinging
physical state	liquid

Safety data

pH	< 2 (20 °C)
Melting point/range	-55.5 °C
Boiling point/range	> 114 - 125 °C
Flash point	Not combustible.
Flammability	not flammable
Autoinflammability	not auto-flammable
Oxidizing properties	oxidizing
Explosiveness	not explosive
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor pressure	2.99 hPa (25 °C) tested substance: hydrogen peroxide 100 %
Density	1.241 g/cm3 (20 °C)
Relative density	1.2364 (25 °C)
Water solubility	miscible
Partition coefficient (n-octanol/water)	log Pow: -1.57 Method: (calculated) tested substance: hydrogen peroxide 100 %
Viscosity, dynamic	1.90 mPa.s (0 °C)
Relative vapor density	Heavier than air.

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Vapour density	No data available
Molecular Weight	34.02 g/Mol

Further information

Miscibility in water	completely miscible
Surface tension	ca. 76.65 mN/m (20 °C)
Other information	strong oxidizing agent
Evaporation rate	Faster than butyl acetate

10. STABILITY AND REACTIVITY

Conditions to avoid	sun rays, heat, heat effect
Materials to avoid	impurities, decomposition catalysts, metals, metallic salts, alkalis, hydrochloric acid, reducing agents., (Risk of decomposition.). flammable substances (Danger of fire). organic solvents (danger of explosion)
Hazardous decomposition products	decomposition products Under conditions of thermal decomposition: steam, oxygen
Thermal decomposition	No data available
Hazardous reactions	Product is a strong oxidizing agent and reactive. Stable under recommended storage conditions. Commercial products are stabilised to reduce risk of decomposition due to contamination. Danger of decomposition if exposed to heat When coming in contact with the product, impurities, decomposition catalysts, incompatible substances, combustible substances, may lead to self-accelerated, exothermic decomposition and the formation of oxygen. Risk of overpressure and burst due to decomposition in confined spaces and pipes. Release of oxygen may support combustion. Mixtures with organic materials (e.g. solvents) can display explosive properties. A severe detonation hazard may exist when mixed with organic liquids, e.g. kerosene or gasoline. SPONTANEOUS COMBUSTION HAZARD: Combustible materials exposed to hydrogen peroxide should be immediately submerged in or

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rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood, or other combustibles, can cause the material to ignite and result in a fire.

Safety notes

Under NFPA 400 - Hazardous Materials Code - 2013 Edition, Hydrogen Peroxide solutions are categorized in Appendix G as follows:
Solutions greater than 8% up to 27.5% are Class 1 Oxidizers.
Solutions greater than 27.5% up to 52% are Class 2 Oxidizers.
Solutions greater than 52% up to 91% are Class 3 Oxidizers.

Further information

No further information available

11. TOXICOLOGICAL INFORMATION

Product Acute oral toxicity

LD50 Rat(female): 801 mg/kg
Method: OECD Test Guideline 401
Test substance: hydrogen peroxide, 60 %

LD50 rat(male): 872 mg/kg
Method: OECD Test Guideline 401
Test substance: hydrogen peroxide, 60 %

Product Acute inhalation toxicity

LC50 Rat(male/female): > 0.17 mg/l / 4 hMethod: US-EPA-method
Test substance: hydrogen peroxide, 50 %
the maximum dose attainable under experimental conditions no fatalities

Product Acute dermal toxicity

LD50 Rabbit: > 6500 mg/kg
Method: literature
Test substance: Hydrogen peroxide 70 %

LD50 Rabbit(male/female): > 2000 mg/kg
Method: US-EPA-method
Test substance: hydrogen peroxide, 35 %

Product Skin irritation

Rabbit / 3 min
strongly corrosive
Method: literature
Test substance: Hydrogen peroxide 70 %

Rabbit / 4 h
irritating
Test substance: hydrogen peroxide, 35 %

Product Eye irritation

Rabbit
Risk of serious damage to eyes.
Method: literature
Test substance: hydrogen peroxide, 35 %

Rabbit
irritating

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Method: OECD Test Guideline 405
Test substance: hydrogen peroxide 10 %
literature

Product Sensitization

Sensitization test guinea pig: not sensitizing
Method: (Magnusson-Kligman test)
literature

Product Repeated dose toxicity

Oral mouse(female) / 90-day
Subsequent observation period: 6 weeks
NOEL: 37 mg/kg
target organ/effect: Changes of parameters of the blood, body weight development negative, Irritative effect:, Gastrointestinal tract
Method: OECD TG 408
Test substance: hydrogen peroxide, 35 %
drinking water analysis

Oral mouse(male) / 90-day
Subsequent observation period: 6 weeks
NOEL: 26 mg/kg
target organ/effect: Changes of parameters of the blood, body weight development negative, Irritative effect:, Gastrointestinal tract
Method: OECD TG 408
Test substance: hydrogen peroxide, 35 %
drinking water analysis

Product Gentoxicity in vitro

Bacterial reverse mutation assay S. typhimurium / E. coli
positive and negative
Metabolic activation: with or without
literature

chromosomal aberration mammalian cells
positive
Metabolic activation: without
Method: OECD TG 473
literature

Genetic mutation in mammal cells
positive
Metabolic activation: without
Method: OECD TG 476
literature

Product Gentoxicity in vivo

Micronucleus test mouse intraperitoneal (i.p.)
negative
Method: OECD TG 474
Test substance: hydrogen peroxide, 35 %
literature

Product Carcinogenicity

No data available

Product carcinogenicity assessment

Clues to possible carcinogenic effects in animal experiments:
Up to date there is no evidence of increased tumour risk.

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Hydrogen peroxide is not a carcinogenic substance according to MAK, IARC, NTP, OSHA, ACGIH.

Product Toxicity to reproduction: No data available

Product Human experience:

Effect on the skin:

Causes caustic burns. With increasing contact length, local erythema or extreme irritation (whitening) up to blistering (caustic burn) can occur.

Effect on the eyes:

Extreme irritation up to cauterisation. Can cause severe conjunctivitis, cornea damage or irreversible eye damage. Symptoms may occur with delay.

Effect when swallowed:

Swallowing can lead to bleeding of the mucosa in the mouth, oesophagus and stomach.

The rapid releasing of oxygen can cause distension and bleeding of the mucosa in the stomach and lead to severe damage of the internal organs, especially in the event of greater intake of the product.

Effect when inhaled:

Inhalation of vapour/aerosols can lead to irritation of the respiratory tract and cause inflammation of the respiratory tract and pulmonary oedema. Symptoms may occur with delay.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

photo-decomposition: 50 % degradation within approx. 20 hours; medium: air

Biodegradability: Readily biodegradable
Test substance: hydrogen peroxide 100 %
Semiquantitative measurement of concentration over time.

Further Information: Under ambient conditions quick hydrolysis, Reduction or decomposition occurs.
The following substances are formed: oxygen and water.

Behaviour in environmental compartments

Bioaccumulation: None.
Hydrogen peroxide quickly decomposes to oxygen and water.

Mobility: No data available

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Ecotoxicity effects

Toxicity to fish	LC50 semi-static test Pimephales promelas: 16.4 mg/l / 96 h Test substance: hydrogen peroxide 100 %
Toxicity to daphnia	EC50 semi-static test Daphnia pulex: 2.4 mg/l / 48 h Test substance: hydrogen peroxide 100 %
Toxicity to algae	NOEC static test Skeletonema costatum: 0.63 mg/l / 72 h End point: growth rate Test substance: hydrogen peroxide 100 %
Toxicity to bacteria	EC50 static test Activated sludge: 466 mg/l / 30 min Test substance: hydrogen peroxide 100 % Method: OECD TG 209 EC50 static test Activated sludge: > 1000 mg/l / 3 h Test substance: hydrogen peroxide 100 % Method: OECD TG 209
chronic toxicity in daphnia	NOEC flow-through test Daphnia magna: 0.63 mg/l / 21 d Test substance: hydrogen peroxide 100 % literature

Further information on ecology

AOX	The product does not contain any organically bonded halogen.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Advice on disposal	Disposal according to local authority regulations. If necessary: Because of recycling/disposal contact the relevant authorities. Offer surplus and non-recyclable solutions to a licensed disposal company. With small amounts: May be disposed of as sewage water in accordance with local legal regulations by previously diluting with plenty of water. (drainage systems, sewage treatment plant The appropriate regulatory agencies should be contacted prior to disposal. A possible method of disposal is to dilute with large amounts of water to a concentration of about 5% hydrogen peroxide; hold in diked area or pond until peroxide is completely decomposed or dispose of according to all relevant local, provincial, state, and federal laws and regulations. Use personal protective equipment as described in section 8. Do not contaminate any lakes, streams, ponds, groundwater or soil. If necessary, contact supplier for recommendations to decompose dilute peroxide (5%)

14. TRANSPORT INFORMATION

IMPORTANT: While Brenntag believes the information contained herein to be accurate, Brenntag makes no representation or warranty, express or implied, regarding, and assumes no liability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accordance with the applicable federal, state, and local law. This MSDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brenntag's terms and conditions of sale.

D.O.T. Road/Rail

Class	5.1
UN-No	2014
Packing group	II
Subsidiary risk	8
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTIONS

Sea transport IMDG-Code

Class	5.1
UN-No	2014
Packing group	II
Subsidiary risk	8
EmS	F-H, S-Q
Proper technical name (Proper shipping name)	HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Air transport ICAO-TI/IATA-DGR

Class	5.1
UN-No	2014
Packing group	II
Subsidiary risk	8
Proper technical name (Proper shipping name)	Hydrogen peroxide, aqueous solution

Loading instructions/Remarks

IMDG	Protect from heat. On deck only. Product-specific regulation s on storing substances separately.
IATA_C	ERG-Code 5C
IATA_P	ERG-Code 5C
IMDG	"Separated from" permanganates and class 4.1.
TDG_INWTR	Canada: ERAP 2-1008-072, ER 24 hour number 1 800 567 7455
TDG_RAIL	Canada: ERAP 2-1008-072, ER 24 hour number 1 800 567 7455
TDG_ROAD	Canada: ERAP 2-1008-072, ER 24 hour number 1 800 567 7455
CFR_RAIL	DOT-SP 14532 allows visual examination without removal of the rupture disc. This special approval applies on tank car shipments only

15. REGULATORY INFORMATION

Information on Ingredients / Non-hazardous components

This product contains the following non-hazardous components

Water
CAS-No. 7732-18-5 Percent (Wt./ Wt.) >= 60 - <= 100 %

US Federal Regulations

OSHA

If listed below, chemical specific standards apply to the product or components.

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- None listed

Clean Air Act Section (112)
If listed below, components present at or above the de minimus level are hazardous air pollutants:

- None listed

CERCLA Reportable Quantities
If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

SARA Title III Section 311/312 Hazard Categories
The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard
- Reactivity Hazard

SARA Title III Section 313 Reportable Substances
If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- None listed

Toxic Substances Control Act (TSCA)
If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

State Regulations

California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

- None listed

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International Chemical Inventory Status

Unless otherwise noted, this product is in compliance with the inventory listing of the countries shown below. For information on listing for countries not shown, contact the Product Regulatory Services Department.

• Europe (EINECS/ELINCS)	Listed/registered
• USA (TSCA)	Listed/registered
• Canada (DSL)	Listed/registered
• Australia (AICS)	Listed/registered
• Japan (MITI)	Listed/registered
• Korea (TCCL)	Listed/registered
• Philippines (PICCS)	Listed/registered
• China	Listed/registered
• New Zealand	Listed/registered

16. OTHER INFORMATION

HMIS Ratings

Health :	3
Flammability :	0
Physical Hazard :	1

NFPA Ratings

Health :	3
Flammability :	0
Reactivity :	1

Further information

Data for the production of the safety data sheet from the studies available and from the literature. Further information about the characteristics of the product can be found in the product code of practice or in the Product-Brochure .

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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