SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

1. Identification

Product identifier: OXTERIL® 27 LRA

Other means of identification
Synonyms: DUROX® 27 LRA

Recommended restrictions
Recommended use: Aseptic packaging
Restrictions on use: Not known.

Manufacturer/Importer/Distributor Information

Company Name	:	Evonik Active Oxygens, LLC, a subsidiary of Evonik Corporation 2005 Market Street Suite 3200 Philadelphia, PA 19103
Telephone	:	+1 267-422-2400
E-mail	:	product-regulatory-services@evonik.com

Emergency telephone number:

24-Hour Health Emergency	:	+1 800 424 9300 (CHEMTREC - US & CANADA) 800 681 9531 (CHEMTREC MEXICO) +1 703 527 3887 (CHEMTREC WORLD)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Acute toxicity (Oral)	Category 4
Serious Eye Damage/Eye Irritation	Category 1

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement:
Harmful if swallowed.
Causes serious eye damage.

Precautionary

Statements

Prevention: Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. Immediately call a POISON CENTER/doctor. Take off contaminated clothing.

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.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Hydrogen peroxide		7722-84-1	>=22 - <30%

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

Composition Comments: aqueous solution, clear

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of necessary first-aid measures

General information: 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 the victim unattended. Place patients who are unconscious but breathing in the stabilized lateral position.

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

Skin Contact:	Wash off affected area immediately with plenty of water for at least 15 minutes. Get medical attention if any discomfort continues.
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 mouth. Immediately give large quantities of water to drink. Seek medical advice. When dealing with caustic substances, notify emergency physician immediately.
Personal Protection for First-aid Responders:	No data available.

Most important symptoms and effects, both acute and delayed

Symptoms:	Irritation of skin and mucous membranes Corrosive Daze Headache, vertigo, somnolence (sleepiness), nausea. Health injuries may be delayed.
Hazards:	Strongly irritating to corrosive. Harmful in contact with skin and if swallowed. . Vapours may cause drowsiness and dizziness.

Indication of immediate medical attention and special treatment needed

Treatment:	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

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray.Only water is recommended in case of fires involving substantial quantities of hydrogen peroxide.For fires involving small amounts of hydrogen peroxide: Adapt fire-extinguishing measures to surroundings. Ex. use water, foam, dry powder, carbon dioxide (CO_2).
Unsuitable extinguishing media:	Organic compounds.

Special hazards arising from the substance or mixture:	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 and precautions for firefighters

Special fire fighting procedures:	Evacuate personnel to safe areas. Keep unauthorized personnel 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.Ensure there are sufficient retaining facilities for water used to extinguish fire. Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities. Fire residues should be disposed of in accordance with the regulations. Water used to extinguish fire should not enter drainage systems, soil or stretches of water.Evacuate area and fight fire from a safe distance. 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.
Special protective equipment for fire-fighters:	In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Evacuate personnel to safe areas. Keep unauthorized personnel away.

Accidental release measures:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. Evacuate area and do not approach spilled product. 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.
For emergency responders:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. Make safe or remove all sources of ignition. Do not breathe in vapours or aerosols. Avoid contact with eyes, skin, and clothing. 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.).
Methods and material for containment and cleaning up:	In case of larger quantities: Collect product in suitable containers (e. g. made of plastic) using appropriate equipment (e. g. liquid pump). Dispose of absorbed material in accordance with the regulations. Keep away from flammable substances. Keep away from incompatible substances. Rinse away any residue with plenty of water. With small amounts: Absorb with liquid-binding material, e. g.: diatomaceous earth or universal binder. Dispose of absorbed material in accordance with the regulations. Rinse away any residue with plenty of water. Pack and label wastes like the pure substance. Do not detach label from the delivery containers prior to disposal.
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 allow substance to enter soil, bodies of water or sewage canals. If the product contaminates rivers and lakes or drains inform respective authorities. Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation):	Ensure suitable suction/aeration at the work place and with operational machinery.Suitable measuring processes are:OSHA method ID 006 OSHA method VI-6
Safe handling advice:	Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment. Check the proper condition of personal safety equipment before use. Observe ergonomic requirements when selecting

personal safety equipment. Avoid impurities and heat effect. Never return spilled product into its original container for re-use. (Risk of decomposition.). Do not inhale vapour, aerosols, mist. Ensure there is good room ventilation. Set up safety and operation procedures. Provide for installation of emergency shower and eye bath.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. Safety showers and eye showers should be easily accessible. In order to determine further specifications applicable to the personal protection equipment, a hazard assessment according to the OSHA standards (29 CFR 1910.132) for personal protection equipment (PPE) is recommended before the product is used.

Contact avoidance measures: No data available.

Storage

Safe storage conditions: Keep at temperature not exceeding 40°C. Keep containers tightly closed in a cool, well-ventilated place. clean, dry. Jointless smooth concrete floor. Avoid sun rays, heat, heat effect. Keep away from sources of ignition - No smoking. Keep away from flammable substances. Keep away from incompatible substances. 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). Only use containers which are specially permitted for: hydrogen peroxide 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. Store containers in such a manner that liquids released are collected in a catch vessel in case of leaks. Take precautionary measures against static discharges. Always close container tightly after removal of product. Ensure tightness at all times. Avoid leackage. Do not keep the container sealed. Avoid residues of the product on the containers. 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.-Suitable container material:stainless steel 304L or 316L passivated aluminium 5254 or 1060: min. 99.5 % passivatedaluminium magnesium alloys, passivated Polyethylene. Polyvinyl chloride (PVC). polytetrafluoroethylene glass ceramics.-Inadequate materials are: Iron. Mild steel. Copper bronze brass zinc tin Lead SilverKeep 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

Safe packaging materials: No data available.

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, as amended (03 2016)
	REL	1 ppm	1.4 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
	PEL	1 ppm	1.4 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (03 2016)
	IDLH	75 ppm		US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended (10 2017)
	TWA	1 ppm	1.4 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)
	TWA	1 ppm	1.4 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended (06 2008)
	ST ESL		14 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (11 2016)
	ST ESL		10 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (11 2016)
	AN ESL		1.4 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (11 2016)
	AN ESL		1 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (11 2016)
Hydrogen peroxide - as H2O2	TWA PEL	1 ppm	1.4 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended (01 2015)

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.
Suitable measuring processes are:
OSHA method ID 006 OSHA method VI-6

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

Appropriate Engineering Controls	Ensure suitable suction/aeration at the work place and with operational machinery. Suitable measuring processes are: OSHA method ID 006 OSHA method VI-6

Individual protection measures, such as personal protective equipment

Eye/face protection:	wear basket-shaped glasses or safety goggles with side-shields. When handling larger quantities: protective screen

Skin Protection

Hand Protection:	Material: natural latex (NR), nitrile rubber (NBR) Break-through time: > 480 min Guideline: DIN EN 374Material: Nitrile. Break-through time: > 480 min Guideline: DIN EN 374Material: Butyl rubber. Break-through time: > 480 min Guideline: DIN EN 374Additional Information: 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., Use impermeable gloves.
Skin and Body Protection:	Select materials and equipment for physical protection depending on the concentration and volume of hazardous substances and the workplace involved. Wear suitable protective clothing. for example: Usual lab protective clothing Light-duty chemical protective clothing (type2) (DIN EN 943-1 / DIN EN 943-2) Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required. Gore Tex, Tyvek, or PVC full chemical splash suit. Do not wear protective clothes containing cotton. Suitable materials are: PVC, neoprene, nitrile rubber, natural rubber.
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 Note time limit for wearing respiratory protective equipment. 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

Hygiene measures:	The work-place related airborne concentrations have to be kept below of the indicated exposure limits. Avoid contact with eyes, skin, and clothing. Do not inhale vapour, aerosols, mist. Ensure there is good room ventilation. Immediately rinse contaminated or saturated clothing with water. Take off immediately all contaminated clothing. Any contaminated protective equipment is to be cleaned after use. Contaminated work clothing should not be allowed out of the workplace. No eating, drinking, smoking, or snuffing tobacco at work. Wash hands before breaks and at the end of workday. Preventive skin protection Use barrier cream regularly.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	colorless, clear
Odor:	slightly pungent
Odor Threshold:	No data available.
Freezing point:	-9 °F/-23 °C
Boiling Point:	221 °F/105 °C
Flammability:	not flammable

Upper/lower limit on flammability or explosive limits

Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Flash Point:	Not combustible.
Autoignition Temperature:	not spontaneously flammable
Decomposition Temperature:	No data available.
pH:	< 3 (20 °C)

Viscosity

Dynamic viscosity:	1.90 mPa.s (32 °F/0 °C)
Kinematic viscosity:	No data available.
Flow Time:	No data available.

Solubility(ies)

Solubility in Water:	miscible
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	-1.57 (calculated) tested substance: hydrogen peroxide 100 %
Vapor pressure:	2.99 hPa (77 °F/25 °C) tested substance: hydrogen peroxide 100 %
Relative density:	1.096
Density:	1.099 g/cm3 (68 °F/20 °C)
Bulk density:	No data available.
Relative vapor density:	Heavier than air

Other information

Explosive properties:	Not explosive

Oxidizing properties:	The substance or mixture is not classified as oxidizing. UN Test O.2 (oxidizing liquids)
Metal Corrosion:	No data available.
Evaporation Rate:	No data available.
Miscible (water):	completely miscible
Surface tension	Approximate 74.67 mN/m, 68 °F/20 °C
Molecular weight:	34.02 g/mol

10. Stability and reactivity

Reactivity:	Product is a(n) oxidizing agent and reactive.
Chemical Stability:	Stable under recommended storage conditions. Commercial products are stabilised to reduce risk of decomposition due to contamination.
Possibility of hazardous reactions:	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. 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. A severe detonation hazard may exist when mixed with organic liquids, e.g. kerosene or gasoline.
Conditions to avoid:	sun rays, heat, heat effect
Incompatible Materials:	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:	Steam Oxygen

11. Toxicological information

Information on toxicological effects

Information on likely routes of exposure

Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Ingestion:	No data available.

Acute toxicity (list all possible routes of exposure)

Oral

Product:	LD 50 (Rat, Male): 1,193 mg/kg (EPA Method) LD 50 (Rat, Female): 1,270 mg/kg (EPA Method)

Dermal

Product:	LD 50 (Rabbit, Female, Male): > 2,000 mg/kg (US-EPA-method)

Inhalation

Product:	No data available.
Components:	
Hydrogen peroxide	LC 50 (Acute toxicity estimate, 4 h): 1.5 mg/l Dust and mist LC 50 (Acute toxicity estimate, 4 h): 11 mg/l Vapour

Repeated dose toxicity

Product:	(Target Organ(s): Changes of parameters of the blood, body weight development negative, Irritative effect:, Gastro-intestinal tract.) drinking water analysis (Target Organ(s): Changes of parameters of the blood, body weight development negative, Irritative effect:, Gastro-intestinal tract.) drinking water analysis

Skin Corrosion/Irritation

Product:	No data available.
Components:	
Hydrogen peroxide	Corrosive. , <= 0.05 h

Serious Eye Damage/Eye Irritation

Product:	Risk of serious damage to eyes. Rabbit: Risk of serious damage to eyes. (literature)

Respiratory or Skin Sensitization

Product:	No data available.
Components:	
Hydrogen peroxide	Magnussona i Kligmana. (Guinea Pig): Not a skin sensitizer. Literature

Carcinogenicity

Product:	No data available.
Components:	
Hydrogen peroxide	Clues to possible carcinogenic effects in animal experiments: Up to date there is no evidence of increased tumour risk. Hydrogen peroxide is not a carcinogenic substance according to MAK, IARC, NTP, OSHA, ACGIH.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:
No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro

Product:	No data available.
Components:	

Hydrogen peroxide	Bacterial reverse mutation assay: positive and negative Literature Chromosomal aberration (OECD 473): positive Literature Genetic mutation in mammal cells (OECD 476): positive Literature

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.
Components:

Hydrogen peroxide	Inhalation - vapor: Respiratory system - Category 3 with respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

Aspiration Hazard
Product: No data available.
Components:

Hydrogen peroxide	Not classified

Information on health hazards

Other hazards
Product: No data available.

12. Ecological information

Ecotoxicity:
Acute hazards to the aquatic environment:

Fish
Product: LC 50 (Pimephales promelas, 96 h): 16.4 mg/l Hydrogen peroxide (H_2O_2)

Aquatic Invertebrates
Product: EC 50 (Daphnia pulex, 48 h): 2.4 mg/l Hydrogen peroxide (H_2O_2)

Toxicity to Aquatic Plants
Product: No data available.

Toxicity to microorganisms
Product: EC 50 (activated sludge, 30 min): 466 mg/l (OECD 209) Hydrogen peroxide (H_2O_2) EC 50 (activated sludge, 3 h): > 1,000 mg/l (OECD 209) Hydrogen peroxide (H_2O_2)

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: NOEC (Daphnia magna, 21 d): 0.63 mg/l Hydrogen peroxide (H_2O_2)

Toxicity to Aquatic Plants
Product: NOEC (Skeletonema costatum (marine diatom), 72 h): 0.63 mg/l Hydrogen peroxide (H_2O_2)

Toxicity to microorganisms

Product: EC 50 (activated sludge, 30 min): 466 mg/l (OECD 209) Hydrogen peroxide (H2O2) EC 50 (activated sludge, 3 h): > 1,000 mg/l (OECD 209) Hydrogen peroxide (H2O2)

Persistence and Degradability

Biodegradation

Product: Readily biodegradable
Semiquantitative measurement of concentration over time., Readily biodegradable

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

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

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: -1.57 (calculated) tested substance: hydrogen peroxide 100 %

Mobility in soil:

Product No data available.

Results of PBT and vPvB assessment:

Product Not a PBT, vPvB substance as per the criteria of the REACH Regulation.

Other adverse effects:

Other hazards

Product: No data available.

13. Disposal considerations

Disposal methods: Disposal according to local authority regulations. Offer surplus and non-recyclable solutions to a licensed disposal company. The appropriate regulatory agencies should be contacted prior to disposal.

Contaminated Packaging: Rinse empty containers before disposal; recommended cleaning agent: water. Offer rinsed packaging material to local recycling facilities. Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities. Dispose of containers that have not been emptied completely and/or cleaned like of substance.

14. Transport information

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 2014
Proper shipping name	:	Hydrogen peroxide, aqueous solutions
Class	:	5.1
Subsidiary risk	:	8

Packing group	:	II
Labels	:	5.1 (8)
ERG Code	:	140
Marine pollutant	:	no

International Regulations

IATA-DGR

UN/ID No.	:	UN 2014
Proper shipping name	:	Hydrogen peroxide, aqueous solution
Class	:	5.1
Subsidiary risk	:	8
Packing group	:	II
Labels	:	5.1 (8)
Packing instruction (cargo aircraft)	:	554
Packing instruction (passenger aircraft)	:	550
Remarks	:	ERG-Code 5C

IMDG-Code

UN number or ID number	:	UN 2014
Proper shipping name	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Class	:	5.1
Subsidiary risk	:	8
Packing group	:	II
Labels	:	5.1 (8)
EmS Code	:	F-H, S-Q
Marine pollutant	:	no
Remarks	:	Protect from heat. On deck only. Product-specific regulation s on storing substances separately."Separated from" permanganates and class 4.1.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)
None present or none present in regulated quantities.

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

Acute toxicity (any route of exposure), Skin Corrosion or Irritation, Serious eye damage or eye irritation

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

Chemical Identity
HYDROGEN PEROXIDE
(CONC.> 52%)

US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

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.

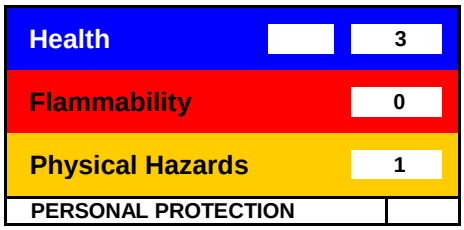
Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient requiring a warning under CA Prop 65.

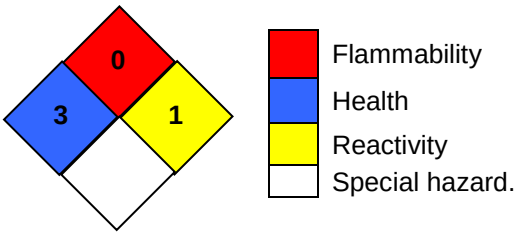
16.Other information, including date of preparation or last revision

HMIS Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 09/04/2022

Version #: 1.2

Further Information:	This chemical may be used as a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label: ------ FIFRA--- Hazards to Humans and Domestic Animals:--- Danger---Corrosive CAUSES IRREVERSIBLE EYE DAMAGE AND SKIN BURNS May be fatal if inhaled. Harmful if absorbed through skin or swallowed. --- Physical and Chemical Hazards --- Strong oxidizing agents.--- Environmental Hazards --- THIS PESTICIDE IS TOXIC TO BIRDS, FISH, AND AQUATIC INVERTEBRATES
Revision Information	Changes since the last version are highlighted in the margin. This version replaces all previous versions.
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