

SAFETY DATA SHEET
VigorOx® 15 F&V

SDS # : 79-21-0-15
Revision date: 2017-07-18
Format: NA
Version 1.07



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name VigorOx® 15 F&V

Other means of identification

EPA Registration Number 65402-3

CAS-No 79-21-0
Synonyms Peracetic Acid; Ethaneperoxoic Acid; Peroxyacetic Acid; Acetyl Hydroperoxide

Recommended use of the chemical and restrictions on use

Recommended Use: Antimicrobial agent for treatment of raw agricultural commodities and for sanitation of associated equipment

Restrictions on Use Use as recommended by the label.

Manufacturer/Supplier

PeroxyChem LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
Phone: +1 267/ 422-2400 (General Information)
E-Mail: sdsinfo@peroxychem.com

Emergency telephone numbers

For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)
1 303/ 389-1409 (Medical - U.S. - Call Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3

Organic Peroxide

Type F

GHS Label elements, including precautionary statements**EMERGENCY OVERVIEW****Danger****Hazard Statements**

H314 - Causes severe skin burns and eye damage
 H302 - Harmful if swallowed
 H312 - Harmful in contact with skin
 H332 - Harmful if inhaled
 H335 - May cause respiratory irritation
 H242 - Heating may cause a fire

**Precautionary Statements - Prevention**

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
 P260 - Do not breathe mist, vapours or spray.
 P220 - Keep/Store away from clothing/combustible materials
 P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 P234 - Keep only in original container

Precautionary Statements - Response

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 P363 - Wash contaminated clothing before reuse
 P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P312 - Call a POISON CENTER or doctor if you feel unwell
 P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
 P370 + P378 - In case of fire: Use water spray for extinction

Precautionary Statements - Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
 P411 + P235 - Store at temperatures not exceeding 30 °C/ 86 °F. Keep cool
 P410 - Protect from sunlight.

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

Do not store on wooden pallets. Avoid damage to containers. In case of decomposition: isolate container, douse container with cool water and dilute with large volumes of water. In case of leak or spill: Stop leak if this can be done without risk. Flush area with large quantities of water. Undiluted material should not be allowed to enter confined spaces. Risk of decomposition by heat or by contact with incompatible materials

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No	Weight %
Water	7732-18-5	31 - 44
Acetic Acid	64-19-7	33 - 38
Peracetic Acid	79-21-0	15 - 17
Hydrogen Peroxide	7722-84-1	9-11

4. FIRST AID MEASURES

Eye Contact	In case of eye contact, remove contact lenses and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.
Inhalation	Move to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.
Ingestion	Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Call a physician or poison control center immediately.
Most important symptoms and effects, both acute and delayed	Liquid and mist are corrosive (causing burns); direct contact could cause irreversible damage to eyes including blindness and/or irreversible destruction of skin tissue. Vapor/mist will irritate nose, throat and lungs but will usually subside when exposure ceases.
Indication of immediate medical attention and special treatment needed, if necessary	This product can be corrosive to skin, eyes and mucous membranes. Consideration should be given to careful endoscopy as stomach or esophageal burns, perforations or strictures may occur. Careful gastric lavage with an endotracheal tube in place should be considered. Observation may be warranted. Treatment is controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Water. Cool containers with flooding quantities of water until well after fire is out.
Unsuitable extinguishing media	Chemical type extinguishers are not effective with peracetic acid or hydrogen peroxide.
Specific Hazards Arising from the Chemical	Decomposes under fire conditions to release oxygen that intensifies the fire.
Explosion data	
Sensitivity to Mechanical Impact	Not Available.
Sensitivity to Static Discharge	Not Available.
Protective equipment and precautions for firefighters	Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see Section 8.
Other	For further clean-up instructions, call PeroxyChem Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

Environmental Precautions	Prevent material from entering into soil, ditches, sewers, waterways, and/or groundwater. See Section 12, Ecological Information for more detailed information.
Methods for Containment	Control runoff and isolate discharged material for proper disposal. Do not allow material to enter storm or sanitary sewer system.
Methods for cleaning up	Hydrogen peroxide is an ingredient in this product; completely submerge hydrogen peroxide contaminated clothing or other materials in water prior to drying. Residual hydrogen peroxide, if allowed to dry on combustible materials such as paper, fabrics, leather or wood can cause the material to ignite and result in a fire. Dispose of waste as indicated in Section 13.

7. HANDLING AND STORAGE

Handling	Handle product only in closed system or provide appropriate exhaust ventilation. Drums - Empty as thoroughly as possible. Triple rinse drums before disposal. Avoid contamination; impurities accelerate decomposition. Never return product to original container. IBC (Tote) - IBC should be emptied as thoroughly as possible and recycled without rinsing.
Storage	Do not stored near reducing agents, fuels or other non-compatible materials. Keep in a dry, cool and well-ventilated place. Keep at temperatures below 30°C. Higher temperatures will accelerate decomposition resulting in loss of assay. Keep away from direct sunlight. Keep away from heat and sources of ignition i.e., steam pipes, radiant heaters, hot air vents or welding sparks. Use first in, first out storage system. Do not double-stack. Containers must be vented.
Incompatible products	Oxidizing agents; Strong reducing agents; Combustible materials; Heavy metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Acetic Acid 64-19-7	STEL 15 ppm TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m ³	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³	Mexico: TWA 10 ppm Mexico: TWA 25 mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 37 mg/m ³
Peracetic Acid 79-21-0	STEL 0.4 ppm	-	-	-
Hydrogen Peroxide 7722-84-1	TWA: 1 ppm	TWA: 1 ppm TWA: 1.4 mg/m ³	IDLH: 75 ppm TWA: 1 ppm TWA: 1.4 mg/m ³	Mexico: TWA 1 ppm Mexico: TWA 1.5 mg/m ³ Mexico: STEL 2 ppm Mexico: STEL 3 mg/m ³
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Acetic Acid 64-19-7	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³
Hydrogen Peroxide 7722-84-1	TWA: 1 ppm	TWA: 1 ppm TWA: 1.4 mg/m ³	TWA: 1 ppm	TWA: 1 ppm TWA: 1.4 mg/m ³

Appropriate engineering controls

Engineering measures	Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Tightly fitting safety goggles. Face-shield.
Skin and Body Protection	Rubber or neoprene footwear. Impervious clothing materials such as rubber, neoprene, nitrile or polyvinyl chloride. Wear liquid proof rubber or neoprene gloves. Hydrogen peroxide is an ingredient in this product; completely submerge hydrogen peroxide contaminated clothing or other materials in water prior to drying. Residual hydrogen peroxide, if allowed to dry on combustible materials such as paper, fabrics, leather or wood can cause the material to ignite and result in a fire.
Hand Protection	Rubber/latex/neoprene or other suitable chemical resistant gloves. Wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.
Respiratory Protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene measures	Clean water should be available for washing in case of eye or skin contamination. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product.
General information	Protective engineering solutions should be implemented and in use before personal protective equipment is considered.

9. PHYSICAL AND CHEMICAL PROPERTIES
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Information on basic physical and chemical properties

Appearance	Clear, colorless liquid
Physical State	Liquid
Color	Colorless
Odor	stinging, Pungent, vinegar-like
Odor threshold	No information available
pH	< 1 @ 25 °C
Melting point/freezing point	-49 °C
Boiling Point/Range	~109 °C / 228 °F
Flash point	80 °C Closed cup Open Cup - No measurable flash point up to 110°C Fire Point - No fire point. This material will not sustain a flame
Evaporation Rate	> 1 (n-butyl acetate=1)
Flammability (solid, gas)	Substance does not burn but will support combustion
Flammability Limit in Air	Not applicable
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	22 mm Hg at 25°C
Vapor density	No information available
Density	9.42 lb/gal @ 25 °C
Specific gravity	1.13 @ 20 °C
Water solubility	completely soluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	305 °C
Decomposition temperature	> 55 °C (SADT)
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	Strong oxidizer
Molecular weight	No information available
Bulk density	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	Reactive and oxidizing agent. Organic peroxide.
Chemical Stability	Stable under recommended storage conditions. Contamination or heat could initiate decomposition.
Possibility of Hazardous Reactions	May produce explosive reactions with Acetic Anhydride.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Temperatures above 30°C. Higher temperatures will accelerate decomposition resulting in loss of assay.
Incompatible materials	Strong reducing agents; Combustible materials; Heavy metals. Oxidizing agents;
Hazardous Decomposition Products	Acetic acid and oxygen that supports combustion.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral	LD50 Rat = 50 -500 mg/kg/bw (35% Peracetic acid) LD50 rat = 1026-1780 mg/kg/bw (15% Peracetic acid) LD50 rat = 185-3622 mg/kg/bw (2.6-6.11% Peracetic acid)
LD50 Dermal	LD50 Rat = 1957 mg/kg/bw (15% Peracetic acid) LD50 rat = 1147 mg/kg/bw (5% Peracetic acid)
LC50 Inhalation	LD50 rat = >2000 mg/kg/bw (Peracetic acid 0.15%-0.89%) LC50 (4-hr) Rat = 4080 mg/m ³ (5% Peracetic acid) (aerosol)
Serious eye damage/eye irritation	Corrosive. Risk of serious damage to eyes.
Skin corrosion/irritation	Corrosive to skin. Severely irritating (rabbit).
Sensitization	Did not cause sensitization on laboratory animals.

Information on toxicological effects

Symptoms	Liquid and mist are corrosive and can cause burns, direct contact could cause irreversible damage to eyes including blindness and/or irreversible destruction of skin tissue. Vapor/mist will irritate the nose, throat and lungs, but will usually subside when exposure ceases. The severity of the effects depends in the concentration and dose.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity	Repeated inhalation of the mist may cause inflammation of the upper respiratory tract, chronic bronchitis and etching of the dental enamel.
Carcinogenicity	Did not show carcinogenic effects in animal experiments. Topical applications do not produce skin tumors. Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH).
Mutagenicity	This product is not recognized as mutagenic by Research Agencies. Did not show mutagenic effects in animal experiments.
Reproductive toxicity	This product is not recognized as reprotox by Research Agencies. No toxicity to reproduction in animal studies.
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	Not classified.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION**Ecotoxicity****Ecotoxicity effects** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Peracetic Acid (79-21-0)				
Active Ingredient(s)	Duration	Species	Value	Units
Peracetic Acid 15%	96 h LC50	Oncorhynchus mykiss (rainbow trout)	0.53	mg/L
Peracetic Acid 5%	96 h LC50	Bluegill sunfish	1.1	mg/L
Peracetic Acid	33 d NOEC	Brachydanio rerio	0.00225	mg/L
Peracetic Acid 5%	96 h LC50	Oncorhynchus mykiss (rainbow trout)	1.6	mg/L
Peracetic Acid 5%	48 h EC50	Daphnia magna	0.73	mg/L
Peracetic Acid 12.5%	48 h EC50	Mytilus edulis	0.27	mg/L
Peracetic Acid 15%	21 d NOEC	Daphnia magna	0.05	mg/L
Peracetic Acid 5%	72 h EC50	Selenastrum capricornutum	0.16	mg/L
Peracetic Acid 5%	120 h EC50	Selenastrum capricornutum	0.18	mg/L
Peracetic Acid 5%	72 h NOEC	Selenastrum capricornutum	0.061	mg/L
Peracetic Acid	3 h EC50	Respiration inhibition test (OECD 209)	5.1	mg/L

Persistence and degradability Peracetic acid is completely miscible with water. Aqueous solutions of peracetic acid hydrolyze to acetic acid and hydrogen peroxide. Product is biodegradable.**Bioaccumulation** Based on its low octanol-water partition coefficient and its rapid degradation in the environment, this product is not bioaccumuable.**Mobility** Peracetic acid released in the environment will partition almost exclusively (>99%) to the water compartment. Only a minor part (<1%) will remain in the atmosphere, where it is expected to undergo rapid decomposition with a half life of 22 minutes. The fate of peracetic acid in the environment is mainly determined by its degradation.**Other Adverse Effects** None known.**13. DISPOSAL CONSIDERATIONS****Waste disposal methods** This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.**US EPA Waste Number** D001; D002**Contaminated Packaging** Do not rinse returnable containers or receptacles not intended for other uses. Non-returnable containers that held this material should be cleaned by triple-rinsing prior to recycle or disposal. Dispose of in accordance with local regulations. Empty remaining contents. Clean container with water.**14. TRANSPORT INFORMATION****DOT**

UN/ID no UN3109
Proper Shipping Name ORGANIC PEROXIDE TYPE F, LIQUID (<=17% Peracetic Acid with <=26% Hydrogen Peroxide)
Hazard class 5.2
Subsidiary class 8
Reportable Quantity (RQ) Hazardous Substance/RQ: Not applicable

TDG

UN/ID no UN3109
Proper Shipping Name ORGANIC PEROXIDE TYPE F, LIQUID (<=17% Peracetic Acid with <=26% Hydrogen Peroxide)
Hazard class 5.2
Subsidiary class 8
Packing Group II

ICAO/IATA

Air regulation permit shipment of peracetic acid in non-vented containers for Air Cargo Only aircraft, as well as for Passenger and Cargo aircraft. HOWEVER, all peracetic acid containers are vented and therefore, air shipments of peracetic acid are not permitted. IATA air regulations state that venting of packages containing oxidizing substances is not permitted for air transport.

IMDG/IMO

UN/ID no UN3109
Proper Shipping Name ORGANIC PEROXIDE TYPE F, LIQUID (<=17% Peracetic Acid with <=26% Hydrogen Peroxide)
Hazard class 5.2
Subsidiary Hazard Class 8
Marine Pollutant When shipped by vessel, this material meets the definition of an environmentally hazardous substance.

OTHER INFORMATION

Protect from physical damage. Material is shipped in 5 gal. (45 lb.) and 55 gal. (450 lb.) vented linear (not cross-linked) polyethylene containers, as well as linear (not cross-linked) polyethylene IBC's (330 gal.). Do not ship on wooden pallets.

15. REGULATORY INFORMATION

U.S. Federal Regulations

Clean Air Act (CAA) - Accidental Release Prevention

Peracetic acid is listed as a Regulated Toxic Substance at 40 CFR 68.130. Pursuant to the threshold determination provisions for mixtures at 40 CFR 68.155(b)(1), the partial pressure of peracetic acid in VigorOx products (up to 35% solutions) are less than 10 mm Hg at 25°C, and thus the product, as sold, is not subject to the threshold determination under the Risk Management Planning regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Peracetic Acid - 79-21-0	79-21-0	15 - 17	1.0

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic health hazard No
Fire hazard Yes
Sudden release of pressure hazard No
Reactive Hazard Yes

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical name	CWA - Reportable	CWA - Toxic Pollutants	CWA - Priority	CWA - Hazardous

	Quantities	Pollutants	Substances
Acetic Acid 64-19-7	5000 lb		X

CERCLA/EPCRA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Response Compensation and Liability Act (CERCLA) or as an extremely hazardous substance (EHS) under the Emergency Planning and Community Right to Know Act (EPCRA) / Superfund Amendments and Reauthorization Act (SARA).

Chemical name	CERCLA Hazardous Substances RQs (40 CFR 302.4)	SARA Sec 304 Extremely Hazardous Substance RQ (40 CFR 355 Appendix A)	SARA Section 302 EHS Threshold Planning Quantity (40 CFR 355)
Acetic Acid 64-19-7	5000 lb		
Hydrogen Peroxide 7722-84-1		1000 lb	1000 lb
Peracetic Acid 79-21-0		500 lb	500 lb

Hydrogen Peroxide RQ is for concentrations of > 52% only

FIFRA INFORMATION

EPA Pesticide registration number 65402-3

This chemical is 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:

DANGER

Corrosive, causes eye and skin damage.

Harmful if swallowed.

Strong oxidizing agent.

This pesticide is toxic to birds, mammals, fish and aquatic invertebrates.

US State Regulations**U.S. State Right-to-Know Regulations**

This product contains the following substances regulated under state Right-to-Know laws:

Chemical name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Acetic Acid	X	X	X		X
Peracetic Acid	X	X	X	X	X
Hydrogen Peroxide	X	X	X		

California Proposition 65

This product does not contain any Proposition 65 chemicals

International Inventories

Component	TSCA (United States)	DSL (Canada)	EINECS/EL INCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)	NZIoC (New Zealand)
Water 7732-18-5 (31 - 44)	X	X	X		X	X	X	X	X
Acetic Acid 64-19-7 (33 - 38)	X	X	X	X	X	X	X	X	X
Peracetic Acid	X	X	X	X	X	X	X	X	X

79-21-0 (15 - 17)									
Hydrogen Peroxide 7722-84-1 (9-11)	X	X	X	X	X	X	X	X	X

Mexico

Mexico - Grade Moderate risk, Grade 2

16. OTHER INFORMATION

NFPA	Health Hazards 3	Flammability 1	Stability 2	Special Hazards OX
HMIS	Health Hazards 3	Flammability 1	Physical hazard 2	Special precautions H

NFPA/HMIS Ratings Legend Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0
 Special Hazards: OX = Oxidizer
 Protection = H (Safety goggles, gloves, apron, the use of supplied air or SCBA respirator is required in lieu of a vapor cartridge respirator)

Uniform Fire Code Organic Peroxide: Class 4--Liquid

Revision date: 2017-07-18
Revision note (M)SDS sections updated 11, 14

Disclaimer

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Prepared By:

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End of Safety Data Sheet