1. Identification

1.1. Product identifier

Trade name **Jet-Oxide 15%**

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified: Biocide for industrial use, postharvest treatment, agricultural irrigation waters

Function: Sanitizer/Disinfectant

1.3. Details of the supplier of the safety data sheet

Company: Jet Harvest Solutions
P.O. Box 915139
Longwood, FL 32791

Telephone: 407-523-7842

Telefax: 407-298-2377

Email address: product@bio-save.com

1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

CHEMTREC - US & CANADA: 800-424-9300

CHEMTREC MEXICO: 01-800-681-9531

CHEMTREC INTERNATIONAL: +1 703-527-3887 **(collect calls accepted)**

Product Regulatory Services : 407-523-7842

2. Hazards identification

2.1. Classification of the substance or mixture

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Organic peroxides	Type F	H242
Corrosive to metals	Category 1	H290
Acute toxicity (Oral)	Category 4	H302
Acute toxicity (Inhalation)	Category 4	H332
Acute toxicity (Dermal)	Category 4	H312
Skin corrosion	Category 1A	H314
Serious eye damage	Category 1	H318
Specific target organ toxicity - single exposure (Respiratory system)	Category 3	H335
Acute aquatic toxicity	Category 2	H401
Chronic aquatic toxicity	Category 1	H410

2.2. Label elements

Statutory basis: Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

hazard-defining component(s) (GHS)

- hydrogen peroxide solution
- Acetic acid
- Peracetic acid

Symbol(s)

Signal word	Danger
Hazard statement	H227 - Combustible liquid. H242 - Heating may cause a fire. H290 - May be corrosive to metals. H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled H314 - Causes severe skin burns and eye damage. H318 - Causes serious eye damage. H335 - May cause respiratory irritation. H401 - Toxic to aquatic life. H410 - Very toxic to aquatic life with long lasting effects.
Precautionary statement: Prevention	P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P220 - Keep/Store away from clothing/ combustible materials. P234 - Keep only in original container. P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 - Wash skin thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
Precautionary statement: Reaction	P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. P363 - Wash contaminated clothing before reuse. P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. P390 - Absorb spillage to prevent material damage. P391 - Collect spillage.
Precautionary statement: Storage	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P405 - Store locked up. P406 - Store in corrosive resistant stainless steel container with a resistant inner liner. P410 - Protect from sunlight. P411 + P235 - Store at temperatures not exceeding .? °C/ .? °F. Keep cool. P420 - Store away from other materials.
Precautionary statement: Disposal	P501 - Dispose of contents/ container to an approved waste disposal plant.

2.3. Other hazards

Use biocides safely. Always read the label and product information before use.
None known

3. Composition/information on ingredients

Chemical nature
Preparation of perethanoic acid, hydrogen peroxide, ethanoic acid and water in balance.

• Peracetic acid	>= 14% - <= 17%
CAS-No. 79-21-0	
Flammable liquids	Category 3
Organic peroxides	Type D
Acute toxicity (Oral)	Category 3
Acute toxicity (Inhalation)	Category 3
Acute toxicity (Dermal)	Category 4
Skin corrosion	Category 1A
Serious eye damage	Category 1
Specific target organ toxicity - single exposure (Respiratory system)	Category 3
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1
M-factor (aquatic, acute) 1	
M-factor (aquatic, chronic) 10	
• hydrogen peroxide solution	>= 20% - <= 30%
CAS-No. 7722-84-1	
Oxidizing liquids	Category 1
Acute toxicity (Oral)	Category 4
Skin corrosion	Category 1A
Serious eye damage	Category 1
Specific target organ toxicity - single exposure (Respiratory system)	Category 3
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 3
• Acetic acid	>= 15% - <= 20%
CAS-No. 64-19-7	
Flammable liquids	Category 3
Skin corrosion	Category 1A
Serious eye damage	Category 1

Other information
This material is classified as hazardous under OSHA regulations.

4. First aid measures

4.1. Description of 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.

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 mouth.
Immediately give large quantities of water to drink.
Obtain medical attention.
When dealing with caustic substances, notify emergency physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms
Irritation of skin and mucous membranes
Causes burns.
daze,
headache, dizziness, somnolence (drowsiness), nausea.
Health injuries may be delayed.

Hazards
Srongly irritating to corrosive.
Harmful in contact with skin and if swallowed.

Vapours may cause drowsiness and dizziness.

4.3. Indication of any immediate medical attention and special treatment needed

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!

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5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: water spray, Foam, dry powder, Carbon dioxide (CO2)
Unsuitable extinguishing media: organic compounds

5.2. Special hazards arising from the substance or mixture

Contact with the following substances may cause inflammation: flammable substances.
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.In case of fire, remove the endangered containers and bring to a safe place, if this can be done safely. Keep away from heat.
If necessary:
In the case of fire, cool the containers that are at risk with water or dilute with water (flooding).

5.3. Advice for firefighters

Evacuate personnel to safe areas.
Keep out unprotected persons.
Keep unauthorized persons away.
Water used to extinguish fire should not enter drainage systems, soil or stretches of water.
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.
In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

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6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Product causes chemical burns. Evacuate personnel to safe areas. Keep out unprotected persons. Keep unauthorized persons away.Remove all sources of ignition. Ventilate the area.

6.2. Environmental precautions

Observe regulations on prevention of water pollution (collect, dam up, cover up)., Do not allow to run into water channels, surface water, or into the ground.Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, rivers, groundwater or soil.

6.3. Methods and material for containment and cleaning up

Keep away from incompatible substances. Keep away from flammable substances. see section 10. Clean contaminated surface thoroughly. Recommended cleaning agent: water. Dispose of absorbed material in accordance with the regulations. see section 13. With small amounts: Dilute product with lots of water and rinse away. see section 12. or Absorb with liquid-binding material, e. g.: chemisorption, diatomaceous earth, universal binder Do not use: textiles, saw dust, combustible substances. Pick up mechanically. Collect in suitable containers.

Additional advice

Make safe or remove all sources of ignition.
Isolate defective containers immediately, if possible and safe to do.
Shut off leak, 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).

Product taken out should not be returned into container.
Never return spilled product into its original container for re-use. (Risk of decomposition.).

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7. Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin, eyes and clothing. Do not breathe in vapours, aerosols, sprays. Wear personal protective equipment. Handle in accordance with good industrial hygiene and safety practice. Avoid impurities and heat effect. Ensure there is good room ventilation. Immediately change moistened and saturated work clothes. Immediately rinse contaminated or saturated clothing with water. Never return spilled product into its original container for re-use. (Risk of decomposition.). Provide for installation of emergency shower and eye bath. Set up safety and operation procedures.

7.2. Conditions for safe storage, including any incompatibilities

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.
see section 10.
To cool, spray closed containers with water spray jet. In case of fire, remove the endangered containers and bring to a safe place, if this can be done safely.
see section 5.

Storage

cool, well ventilated, clean, lockable.
Recommendation: Acid-proof floor.
Only use containers which are specially permitted for: Peracetic acid.
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.
Do not empty container by means of pressure.
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 (1.4571)
Suitable materials	polyethylene, polypropylene, polyvinyl chloride (PVC),
Suitable materials	polytetrafluoroethylene, glass, ceramics.
Unsuitable materials	Iron, Copper, brass, Bronze, Aluminium, tin, zinc.

Further information

Avoid sun rays, heat, heat effect.
Avoid impurities.
see also section 15.

Regularly verify the availability of water to deal with emergencies (for cooling, tank flooding, fire fighting) and check correct operation periodically.
For detailed information on design specifications for the construction of tank- and dosing installations ask the producer for advice.

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).

8. Exposure controls/personal protection

8.1. Control parameters

• Peracetic acid		
CAS-No.	79-21-0	
Control parameters	0.4 ppm	Short Term Exposure Limit (STEL):(ACGIH)
type of exposure	Inhalable fraction and vapor.	
• hydrogen peroxide solution		
CAS-No.	7722-84-1	
Control parameters	1 ppm	Time Weighted Average (TWA):(ACGIH)
Control parameters	1 ppm 1.4 mg/m3	Permissible exposure limit:(OSHA Z1)
Control parameters	1 ppm 1.4 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)
• Acetic acid		
CAS-No.	64-19-7	
Control parameters	10 ppm	Time Weighted Average (TWA):(ACGIH)
Control parameters	15 ppm	Short Term Exposure Limit (STEL):(ACGIH)
Control parameters	10 ppm 25 mg/m3	Permissible exposure limit:(OSHA Z1)
Control parameters	10 ppm 25 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)
Control parameters	40 ppm	Ceiling Limit Value:(US CA OEL)
Control parameters	15 ppm 37 mg/m3	Short Term Exposure Limit (STEL):(US CA OEL)
Control parameters	10 ppm 25 mg/m3	Time Weighted Average (TWA):(TN OEL)

Other information

Suitable measuring processes are:

Hydrogen peroxide

OSHA method ID 006
OSHA method VI-6

Acetic acid

NIOSH method 1603
OSHA method ID 186

DNEL/DMEL values

Remarks	No substance-related safety assessment is necessary / has been conducted for this product.

PNEC values

Remarks	No substance-related safety assessment is necessary / has been conducted for this product.

8.2. Exposure controls

Engineering measures

Ensure suitable suction/aeration at the work place and with operational machinery.
Provide for installation of emergency shower and eye bath.
see also section 7.

Personal protective equipment

Respiratory protection

Do not inhale vapour, aerosols, mist.
If workplace exposure limit is exceeded apply Respiratory protective equipment.
wear a self contained respiratory apparatus
If necessary: Local ventilation.
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.
Note time limit for wearing respiratory protective equipment.

Hand protection

Applies to handling for brief periods or of small amounts

Glove material	Nitrile, for example: Dermatril 740, Kächele-Cama Latex GmbH (KCL), Germany
Material thickness	0.11 mm
Break through time	< 30 min
Method	DIN EN 374

Applies to handling for longer periods or of large amounts

Glove material	Polychloroprene (PCP), for example: Camapren 720, Kächele-Cama Latex GmbH (KCL), Germany
Material thickness	0.65 mm
Break through time	> 480 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.
Use impermeable gloves.
Personal protective equipment that provides a barrier to prevent dermal exposure to this substance is required.

Eye protection

Use chemical splash goggles or face shield.
When handling larger quantities: protective screen

Skin and body protection

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

Avoid contact with skin, eyes and clothing.
Do not inhale vapour, aerosols, mist.
Ensure there is good room ventilation.
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.

No eating, drinking, smoking, or snuffing tobacco at work.
Wash face and/or hands before break and end of work.
Use barrier cream regularly.

Protective measures
Handle in accordance with good industrial hygiene and safety practice.
Wear suitable protective clothing, gloves and eye/face protection.
The work-place related airborne concentrations have to be kept below of the indicated exposure limits.
If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

physical state	liquid	
Colour	colourless, clear	
Form	liquid	
Odour	stinging	
Odour Threshold	No data available	
pH	ca. -0.6	(20 °C)
	Medium: Product	
Melting point/range	ca. -50 °C	
Boiling point/range	not applicable	
	> 60 °C Decomposition	
Flash point	79 °C	(closed cup)
	Method: ISO 2719	
Evaporation rate	No data available	
Flammability (solid, gas)	No data available	
Lower explosion limit	no data available	
Upper explosion limit	no data available	
Vapour pressure	ca. 25 hPa (20 °C)	
Vapour density	No data available	
Relative density	No data available	
Density	ca. 1.15 g/cm3	(20 °C)
Water solubility	No data available	
Partition coefficient: n-octanol/water	log Pow: -0.52 Measured as peracetic acid	

Autoignition temperature	260 °C Method: DIN 51 794
Thermal decomposition	>= 60 °C self-accelerating decomposition
Viscosity, dynamic	No data available

9.2. Other information

Explosiveness	No data available
Oxidizing properties	oxidizing Method: (according to EC Directive 67/548/EEC)
peroxides	Organic peroxide type F, liquid
Metal corrosion	Corrosive to metals
speed of hydrolysis	half-life period: 48 h (25 °C) (pH 4) Method: 92/69/EEC, C.7 half-life period: 48 h (25 °C) (pH 7) Method: 92/69/EEC, C.7 half-life period: 3.6 h (25 °C) (pH 9) Method: 92/69/EEC, C.7 tested substance: peracetic acid
Other information	strong oxidizing agent Burn rate: does not ignite

10. Stability and reactivity

10.1. Reactivity

Risk of self-accelerating, exothermic decomposition with the development of oxygen, at, Effect of thermal energy / heat.
Product is a(n) oxidizing agent and reactive.

10.2. Chemical stability

Stable under recommended storage conditions.
Product is supplied in stabilised form.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	When coming in contact with the product, impurities, decomposition catalysts, metallic salts, alkalis, reducing agents 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.

10.4. Conditions to avoid
sun rays, heat, heat effect

10.5. Incompatible materials
Impurities, decomposition catalysts, metal salts, alkalis, reducing substances., metals, nonferrous heavy metal, aluminium, zinc., Possible hazardous reaction: decomposition.
Flammable materials, Possible hazardous reaction: Spontaneous ignition.
organic solvents, Possible hazardous reaction: Danger of explosion.

10.6. Hazardous decomposition products
decomposition products Under conditions of thermal decomposition:
Steam, Oxygen, Acetic acid

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11. Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity	Acute toxicity estimate : 500 mg/kg Method: Expert judgement
Acute inhalation toxicity	Acute toxicity estimate : 11 mg/l / vapour Method: Expert judgement
Acute dermal toxicity	Acute toxicity estimate : 1100 mg/kg Method: Expert judgement
Skin irritation	Extremely corrosive and destructive to tissue.
Eye irritation	Irreversible effects on the eye
Assessment of STOT single exposure	Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Toxicological information on components
Peracetic acid

Acute oral toxicity	LD50 Rat(female): 1015 mg/kg Method: OECD Test Guideline 401 Test substance: Peracetic acid 15 %
Acute inhalation toxicity	RD50 Mouse(male): 0.012 mg/l / 1 h / vapour Test substance: Peracetic acid 36 % literature LC50 Rat(male): > 0.5 mg/l / 4 h / vapour Method: OECD Test Guideline 403 Test substance: Peracetic acid 36 %
Acute dermal toxicity	LD50 Rabbit(male/female): 1957 mg/kg Method: US-EPA-method Test substance: peracetic acid 12 % LD50 Rabbit(female): 1990 mg/kg Method: US-EPA-method

Test substance: peracetic acid 12 %

LD50 Rabbit(male): 1912 mg/kg
Method: US-EPA-method
Test substance: peracetic acid 12 %

Skin irritation

Rabbit / 4 h
Corrosive
Method: OECD Test Guideline 404
Test substance: Peracetic acid 15 %

Eye irritation

Rabbit
Corrosive
Method: US-EPA-method
Test substance: peracetic acid 17 %

Sensitization

Maximization test guinea pig: Does not cause skin sensitisation.
Method: OECD Test Guideline 406
Test substance: peracetic acid 10 %

Repeated dose toxicity

Oral Rat(male/female) / 13 weeks
Testing period: 92 - 93 d
NOAEL: 1.17 mg/kg
Method: OECD 408
Test substance: peracetic acid 100 %

Assessment of STOT single exposure

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Assessment of STOT repeat exposure

no evidence for hazardous properties

Risk of aspiration toxicity

Not relevant

Gentoxicity in vitro

Ames test Salmonella typhimurium
negative
Metabolic activation: with or without
Method: OECD 471
Test substance: peracetic acid 5 %

HGPRT-Test Chinese hamster (V 79 -cells)
negative
Metabolic activation: with or without
Method: OECD 476
Test substance: peracetic acid 11 %

chromosomal aberration Chinese hamster (V 79 -cells)
negative
Metabolic activation: with or without
Method: OECD 473
Test substance: peracetic acid 11 %

Unscheduled DNA synthesis -test (UDS) human diploid fibroblasts
negative
Metabolic activation: without

Method: OECD TG 482
Test substance: peracetic acid 42 %
literature

Gentoxicity in vivo

Micronucleus test Mouse Oral 30 hours
negative
Method: OECD TG 474
Test substance: peracetic acid 5 %

chromosomal aberration Mouse Oral
negative
Method: Mutagenicity (micronucleus test)
Test substance: peracetic acid 5 %

Unscheduled DNA synthesis -test (UDS) Rat Oral
negative
Method: OECD TG 486
Test substance: peracetic acid 5 %

Carcinogenicity

No data available
not mutagenic

Toxicity to reproduction

Prenatal development toxicity study Oral Rat / 14 days
NOAEL (No Observed Adverse Effect Level) of parents: 12.5 mg/kg
NOAEL F1: 30.4 mg/kg
Method: OECD TG 414
Test substance: peracetic acid 100 %

12. Ecological information

12.1. Toxicity

Toxicity to fish

LC50 Oncorhynchus mykiss: 0.91 mg/l / 96 h
Test substance: peracetic acid 100 %
literature

Toxicity in aquatic invertebrates

EC50 static test Daphnia magna: 0.69 mg/l / 48 h
Test substance: peracetic acid 100 %
Method: US-EPA-method

Toxicity to algae

EC50 static test Pseudokirchneriella subcapitata (aglae): 0.16 mg/l / 72 h
End point: growth rate
Test substance: peracetic acid 100 %
Method: US-EPA-method

NOEC static test Pseudokirchneriella subcapitata (aglae): 0.061 mg/l / 72 h
End point: growth rate
Test substance: peracetic acid 100 %
Method: US-EPA-method

EC50 static test Pseudokirchneriella subcapitata (aglae): 0.86 mg/l / 72 h

End point: growth rate

Test substance: peracetic acid 100 %
Method: OECD TG 201

Toxicity to bacteria

EC50 static test Activated sludge: 38.6 mg/l / 3 h
Test substance: peracetic acid 100 %
Method: OECD 209

EC50 static test Activated sludge: 5.1 mg/l / 3 h
Test substance: peracetic acid 100 %
Method: OECD 209

chronic toxicity in fish

NOEC flow-through test Danio rerio: 0.00094 mg/l / 33 d
Test substance: peracetic acid 100 %
Method: OECD TG 210

chronic toxicity in daphnia

NOEC semi-static test Daphnia magna: 0.05 mg/l / 21 d
Test substance: peracetic acid 100 %
Method: OECD 211

12.2. Persistence and degradability

Biodegradability

aerobic
inoculum: activated sludge
Exposure time: 28 d
Result: 98 % Readily biodegradable.
Test substance: peracetic acid 40 %
Method: OECD TG 301 E
At non-bacteriotoxic concentrations

aerobic
inoculum: activated sludge
Exposure time: 3 min
Result: 100 % Totally biodegradable
Test substance: peracetic acid 40 %
Method: OECD TG 209

AOX

The product does not contain any organically bonded halogen.

Further Information

Under ambient conditions quick hydrolysis, Reduction or decomposition occurs.
The following substances are formed: oxygen, water, acetic acid.
Acetic acid is easily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation

low
log Pow: see chapter 9

12.4. Mobility in soil

Mobility

No data available

12.5. Other adverse effects

Further Information: Does not contain any heavy metals and compounds from EC directive 76/464

e.g. arsenic-, lead
cadmium
Mercury
organic halogen compounds
organic compounds

Ecotoxicology Assessment

Acute aquatic toxicity	Toxic to aquatic life.
Chronic aquatic toxicity	Very toxic to aquatic life with long lasting effects.

13. Disposal considerations

13.1. Waste treatment methods

Product

Waste must be disposed of in accordance with local, state, provincial and federal laws and regulations. Empty containers must be handled with care due to product residue.

Uncleaned packaging
Rinse empty containers before disposal; recommended cleaning agent: water.
Offer rinsed packaging material to local recycling facilities.Dispose of containers that have not been emptied completely and/or cleaned like of substance.

14. Transport information

D.O.T. Road/Rail

14.1. UN number:	UN 3109
14.2. UN proper shipping name:	Organic peroxide type F, liquid(Peroxyacetic acid, type F stabilized - 14 - 17%)
14.3. Transport hazard class(es):	5.2 (8)
14.4. Packing group:	II
14.5. Environmental hazards (Marine pollutant):	--
14.6. Special precautions for user:	Yes

ROAD (CFR): FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!
RAIL (CFR): FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!
Keep separate from alkalis, powdered metals and flammable substances.

Air transport ICAO-TI/IATA-DGR

14.1. UN number:	UN 3109
14.2. UN proper shipping name:	Organic peroxide type F, liquid(contains PEROXYACETIC ACID, TYPE F, stabilized)
14.3. Transport hazard class(es):	5.2 (8)
14.4. Packing group:	--
14.5. Environmental hazards:	--

14.6. Special precautions for user: Yes

IATA-C: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!
Must be protected from direct sunlight and stored away from all sources of heat in a well-ventilated area.

IATA-P: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!
Must be protected from direct sunlight and stored away from all sources of heat in a well-ventilated area.

Keep separate from alkalis, powdered metals and flammable substances.

Sea transport IMDG-Code/GGVSee (Germany)

14.1. UN number:	UN 3109
14.2. UN proper shipping name:	ORGANIC PEROXIDE TYPE F, LIQUID(contains PEROXYACETIC ACID, TYPE F, stabilized)
14.3. Transport hazard class(es):	5.2 (8)
14.4. Packing group:	--
14.5. Environmental hazards (Marine !!!!!!!!!!pollutant):	--
14.6. Special precautions for user:	Yes
EmS:	F-J,S-R

"Separated from" acids and alkalis.
Protected from sources of heat.
FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!
Keep separate from alkalis, powdered metals and flammable substances.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
for transportapproval see regulatory information

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15. Regulatory information

US Federal Regulations

FIFRA

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:

Hazards to Humans and Domestic Animals:
DANGER
CORROSIVE
CAUSES IRREVERESIBLE EYE DAMAGE AND SKIN BURNS.
MAY BE FATAL IF INHALED OR ABSORBED THROUGH THE SKIN.
HARMFUL IF SWALLOWED

Physical and Chemical Hazards:
STRONG OXIDIZING AGENT

Environmental Hazards:
THIS PESTICIDE IS TOXIC TO BIRDS, FISH, AND AQUATIC INVERTEBRATES.

OSHA

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

- 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:

- Acetic acid
  CAS-No. 64-19-7
  Reportable Quantity 25000 lbs

SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- Acute Health 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:

- Peracetic acid
  CAS-No. 79-21-0

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

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 all ingredients listed
USA (TSCA)	listed/registered

	all ingredients listed
Canada (DSL)	listed/registered
	all ingredients listed
Philippines (PICCS)	listed/registered
	all ingredients listed
New Zealand	listed/registered
	all ingredients listed
Korea	listed/registered
	all ingredients listed
China	listed/registered
	all ingredients listed
Australia (AICS)	listed/registered
	all ingredients listed
Japan (MITI)	listed/registered
	all ingredients listed
Switzerland	listed/registered
	all ingredients listed

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

HMIS Ratings

Health :	3
Flammability :	2
Physical Hazard :	2

NFPA Ratings

Health :	3
Flammability :	2
Reactivity :	2

16. Other information

Further information

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 .
Revision date	05/17/2015

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

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Legend

ACC	American Chemistry Council
ACGIH	American Conference of Governmental Industrial Hygenists
ACS	Advisory Committee on Sustainability
ADI	Acceptable Daily Intake
ASTM	American Society for Testing and Materials
ATP	Adaptation to Technical Progress
BCF	Bioconcentration factor
BOD	Biochemical oxygen demand
c.c.	closed cup
CAO	Cargo Aircraft Only
Carc	Carcinogen
CAS	Chemical Abstract Services
CDN	Canada
CEPA	Canadian Environmental Protection Act
CERCLA	Comprehensive Environmental Response – Compensation and Liability Act
CFR	Code of Federal Regulations
CMR	carcinogenic-mutagenic-toxic for reproduction
COD	Chemical oxygen demand
DIN	German Institute for Standardization
DMEL	Derived minimum effect level
DNEL	Derived no effect level
DOT	Department of Transportation
EC50	half maximal effective concentration
EPA	Environmental Protection Agency
ErC50	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
GLP	Good Laboratory Practice
GMO	Genetic Modified Organism
HCS	Hazard Communication Standard
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO-TI	International Civil Aviation Organization- Technical Instructions
ICCA	International Council of Chemical Association
ID	Identification number
IMDG	International Maritime Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
ISO	International Organization For Standardization
LC50	50 % Lethal Concentration
LD50	50 % Lethal Dose
L(E)C50	LC50 or EC50
LOAEL	Lowest observed adverse effect level
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NOAEL	No observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
o. c.	open cup
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PBT	Persistent, bioaccumulative, toxic
PEC	Predicted effect concentration
PNEC	Predicted no effect concentration
RQ	Reportable Quantity
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
UN	United Nations
vPvB	very persistent, very bioaccumulative

voc	volatile organic compounds
WHMIS	Workplace Hazardous Materials Information System
WHO	World Health Organization