



SAFETY DATA SHEET

1. Identification

1.1. Product identifier

Trade name **Jet-Oxide 5%**

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified **Biocide for industrial use, postharvest treatment**
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 **products@bio-save.com**

1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

CHEMTREC - US & CANADA: **800-424-9300**

Product Regulatory Services **407-523-7842**

2. Hazard(s) identification

According to Hazardous Product Regulations

Physical Hazards

Organic peroxides **Type F**
Corrosive to metal **Category 1**

Health Hazards

Acute toxicity (Oral) **Category 4**
Acute toxicity (Inhalation) **Category 4**
Acute toxicity (Dermal) **Category 4**
Skin corrosion **Sub-category 1A**
Serious Eye Damage/Eye Irritation **Category 1**
Specific Target Organ Toxicity -
Single Exposure **Category 3¹**

Target Organs

1. Respiratory system

Environmental Hazards

Acute hazards to the aquatic
environment **Category 2**
Chronic hazards to the aquatic
environment **Category 1**

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Heating may cause a fire.
 May be corrosive to metals.
 Harmful if swallowed, in contact with skin or if inhaled.
 Causes severe skin burns and eye damage.
 May cause respiratory irritation.
 Toxic to aquatic life.
 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep only in original packaging. Ground and bond container and receiving equipment. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. 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. Immediately call a POISON CENTER/doctor. Take off contaminated clothing and wash it before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. Absorb spillage to prevent material damage. Collect spillage.

Storage: Store in a well-ventilated place. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Store at temperatures not exceeding ... °C/...°F. Store separately.

Disposal: Dispose of contents/ container to an approved waste disposal plant.

Other hazards: Risk of decomposition in contact with incompatible substances, impurities, metals, alkalis, reducing agents. Danger of decomposition if exposed to heat Release of oxygen may support combustion. This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients



Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Peracetic acid		79-21-0	4,5 - 5,4%
hydrogen peroxide solution		7722-84-1	>=25 - <30%
Acetic acid		64-19-7	>=5 - <10%

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

Composition Comments: Preparation of perethanoic acid, hydrogen peroxide, ethanoic acid and water in balance.

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 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: Take off all contaminated clothing immediately. 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. Do NOT induce vomiting. Do not administer activated charcoal. Obtain medical attention. When dealing with caustic substances, notify emergency physician immediately.

Personal Protection for First-aid Responders: In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

Most important symptoms/effects, acute and delayed

Symptoms: Strongly irritating to corrosive. daze, Headache, vertigo, somnolence (sleepiness), nausea.

Hazards: Strongly irritating to corrosive. Harmful by inhalation, 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, foam, dry powder or carbon dioxide. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: Do not use full-force water jet in order to avoid dispersal and spread of the fire. Organic compounds.

Specific hazards arising from the chemical: Involved in fire, it may decompose yielding oxygen. Release of oxygen may support combustion. Risk of overpressure and burst due to decomposition in confined spaces and pipes. Hazardous substances might be released in case of fire. carbon monoxide, carbon dioxide

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Evacuate personnel to safe areas. Keep out unprotected persons. Remove sources of ignition. In case of fire, remove the endangered containers and bring to a safe place, if this can be done safely. In the case of fire, cool the containers that are at risk with water or dilute with water (flooding). Ensure there are sufficient retaining facilities for water used to extinguish fire. Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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. Keep out unprotected persons. Evacuate personnel to safe areas.

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.



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 inhale vapours / aerosols. Avoid contact with eyes, skin, and clothing. 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). Never return spilled product into its original container for re-use. (Risk of decomposition.). Release of oxygen may support combustion.
Methods and material for containment and cleaning up:	Absorb with liquid-binding material (e.g. inert absorbent universalbinder) pick up. Do not use: textiles, saw dust, combustible substances. Rinse away any residue with plenty of water. Dispose of absorbed material in accordance with the regulations. Pack and label wastes like the pure substance. Do not detach label from the delivery containers prior to disposal. Clean contaminated surface thoroughly. Recommended cleaning agent: water. Ventilate room.
Environmental Precautions:	Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

7. Handling and storage

Precautions for safe handling:	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 contact with eyes, skin, and clothing. 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. Do not breathe in vapours, aerosols, sprays. Ensure there is good room ventilation. Immediately change moistened and saturated work clothes. Immediately rinse contaminated or saturated clothing with water. Avoid impurities and heat effect. 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.
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Conditions for safe storage, including any incompatibilities:

Avoid sun rays, heat, heat effect. Temperature requirement during storage max. 40 °C. Store in original container. well ventilated, dry, clean, lockable. 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. Check containers and tanks at regular intervals to detect any special changes such as pressure build-up (distension), damage, leakage. 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. Assure impermeability at all times. Avoid residues of the product on the containers. Store containers in such a manner that liquids released are collected in a catch vessel in case of leaks. Do not store together with: alkalis, reductants, metallic salts (risk of decomposition). Do not store together with: inflammable substances (risk of fire). Keep away from incompatible substances. Release of oxygen may support combustion. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. 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. Only use containers which are specially permitted for: Peracetic acid. For transport, storage and tank installations only use suitable materials. - Suitable container material: Polyethylene. polypropylene polytetrafluoroethylene Polyvinyl chloride (PVC). glass ceramics. , Inadequate materials are: Iron. Copper brass Bronze aluminium zinc Lead tin Mild steel.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Observe national threshold limit values.

Biological Limit Values

Observe national threshold limit values.

Appropriate Engineering Controls

Ensure suitable suction/aeration at the work place and with operational machinery. Suitable measuring processes are: Hydrogen peroxide (H2O2) OSHA method ID 006 OSHA method VI-6 Acetic acid NIOSH method 1603 OSHA method ID 186

Individual protection measures, such as personal protective equipment

General information:

No data available.

Eye/face protection:

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

Skin Protection

Hand Protection:

Material: Polychloroprene (PCP)
 Break-through time: > 480 min
 Guideline: DIN EN 374
 Material: Natural Rubber/Natural latex (NR)
 Break-through time: > 480 min
 Guideline: DIN EN 374
 Additional Information: disposable gloves

Other:

Select materials and equipment for physical protection depending on the concentration and volume of hazardous substances and the workplace

involved. Wear suitable protective clothing. acid-proof for example: Usual lab protective clothing Light-duty chemical protective clothing (type2) (DIN EN 943-1 / DIN EN 943-2) Foot protection: Wear safety boots, high, protection class S2 or S4 (DIN EN 20345) In case of larger quantities: If open handling is unavoidable: Heavy-duty chemical protective clothing (type1) (DIN EN 943-1 / DIN EN 943-2) Do not wear protective clothes containing cotton. Suitable materials are: PVC, neoprene, nitrile rubber, natural rubber.

Respiratory Protection: If workplace exposure limit is exceeded apply Respiratory protective equipment. If necessary: Provide with fresh air. In case of larger quantities: If open handling is unavoidable: Wear respiratory protection for example: Full face mask with combination filter A2B2E2K1P2 (Draeger) Full face mask with combination filter OV/AG (3M) Full face mask with combination filter ABEK2P3 (3M) A self-contained breathing apparatus must be worn if the ambient oxygen content is < 17 % (v/v) or if the situation is uncertain. Self-contained breathing apparatus (EN 133) Observe limited wearing time of 30 minutes.

Hygiene measures: 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. Immediately change moistened and saturated work clothes. 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 face and/or hands before break and end of work. Preventive skin protection Use barrier cream regularly.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	colourless
Odor:	stinging, vinegar-like
Odor Threshold:	No data available.
pH:	approx. 0,2 (20 °C) OECD TG 122
Freezing point:	No data available.
Boiling Point:	>= 60 °C Not applicable Decomposition
Flash Point:	(ISO 2719) not measureable (formation of foam)
Evaporation Rate:	No data available.
Flammability (solid, gas):	Not applicable liquid
Flammability Limit - Upper (%):	No data available.
Flammability Limit - Lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density (air=1):	No data available.
Density:	1,12 g/ml (20 °C) (OECD Test Guideline 109)
Relative density:	No data available.
Solubility(ies)	
Solubility in Water:	completely miscible
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	-0,26 (QSAR-Method) calculated pH 7
Autoignition Temperature:	The substance or mixture is not classified as pyrophoric. The substance or mixture is not classified as self heating.



Decomposition Temperature:	>= 60 °C Self-Accelerating decomposition temperature (SADT)
Kinematic viscosity:	1,208 mm ² /s (20 °C, OECD TG 114) 0,814 mm ² /s (40 °C, DIN 51562)
Dynamic viscosity:	No data available.
Explosive properties:	Not explosive
Oxidizing properties:	The substance or mixture is not classified as oxidizing. UN Test O.2 (oxidizing liquids)
Other information	
Molecular weight:	76,05 g/mol
Dust Explosion Limit, Upper:	No data available.
Dust Explosion Limit, Lower:	No data available.
Minimum ignition temperature:	435 °C (DIN 51 794)
Metal Corrosion:	Corrosive to metal Classification on the basis of missing data
Peroxides:	
Self Ignition Temperature:	The substance or mixture is not classified as pyrophoric. The substance or mixture is not classified as self heating.

10. Stability and reactivity

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.
Chemical Stability:	Stable under recommended storage conditions. Product is supplied in stabilised form. Commercial products are stabilised to reduce risk of decomposition due to contamination.
Possibility of hazardous reactions:	Risk of overpressure and burst due to decomposition in confined spaces and pipes. Risk of decomposition in contact with incompatible substances, impurities, metals, alkalis, reducing agents. Release of oxygen may support combustion.
Conditions to avoid:	sun rays, heat, heat effect
Incompatible Materials:	impurities, decomposition catalysts metals, nonferrous heavy metal, aluminium, zinc. metallic salts, alkalis, reducing agents Possible hazardous reaction: decomposition. Flammable material. Possible hazardous reaction: Spontaneous ignition. Organic solvent. Possible hazardous reaction: Danger of explosion.
Hazardous Decomposition Products:	Steam Oxygen Acetic acid

11. Toxicological information

Information on likely routes of exposure

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



Ingestion: No data available.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Ingestion: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: LD 50 (Rat): 1.859 mg/kg

Dermal

Product: LD 50 (Rabbit): 1.147 mg/kg

Inhalation

Product: LC 50 (Rat): 4,08 mg/l

Repeated dose toxicity

Product: No data available.

Specified substance(s):

Acetic acid
NOAEL (Rat(male), Oral): 290 mg/kg literature
NOAEL (Pig, Oral, daily): 450 mg/kg literature

Skin Corrosion/Irritation

Product: Calculation method Corrosive

Serious Eye Damage/Eye Irritation

Product: Rabbit: Causes serious eye damage.

Respiratory or Skin Sensitization

Product: Magnusson & Kligman, OECD Test Guideline 406 (Guinea Pig): Not a skin sensitizer. peracetic acid 10 %

Carcinogenicity

Product: No data available.

Specified substance(s):

hydrogen peroxide solution
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.



Germ Cell Mutagenicity

In vitro

Product: Ames test (OECD 471): negative peracetic acid 5 %
In vitro mammalian cell gene mutation test (OECD 476): negative peracetic acid 11 %
Unscheduled DNA synthesis -test (UDS) (OECD TG 482): negative peracetic acid 42 %

In vivo

Product: In vivo micronucleus test (OECD TG 474) Oral (Mouse, male and female): negative peracetic acid 5 %
Unscheduled DNA synthesis -test (UDS) (OECD TG 486) Oral (Rat, male): negative peracetic acid 5 %
In vivo micronucleus test (OECD TG 474) Oral (Mouse, male and female): negative peracetic acid 11 %

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: Respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Target Organs

Specific Target Organ Toxicity - Single Exposure: Respiratory system

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.



Persistence and Degradability

Biodegradation

Product: 98 % (28 d, OECD TG 301 E) At non-bacteriotoxic concentrations peracetic acid
(3 h, OECD TG 209) peracetic acid

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: low

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: -0,26 20 °C (QSAR-Method) calculated pH 7

Mobility in soil: No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal methods: Disposal according to local authority regulations. Pack and label wastes like the pure substance. Do not detach label from the delivery containers prior to disposal. Do not return unused product to original container (risk of decomposition). Offer surplus and non-recyclable solutions to a licensed disposal company.

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.

14. Transport information

International Regulations

IATA-DGR

UN/ID No. : UN 3149
Proper shipping name : Hydrogen peroxide and peroxyacetic acid mixture stabilized
Class : 5.1
Subsidiary risk : 8
Packing group : II
Labels : 5.1 (8)
Packing instruction (cargo aircraft) : 554
Packing instruction (passenger aircraft) : 550
Remarks : FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!

IMDG-Code

UN number : UN 3149
Proper shipping name : HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED



Class : 5.1
Subsidiary risk : 8
Packing group : II
Labels : 5.1 (8)
EmS Code : F-H, S-Q
Marine pollutant : yes
Remarks : Protect from heat. Separate from metal powders and permanganates., "Separated from" permanganates and class 4.1., FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!

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

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

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

Issue Date: 04.03.2019
Revision Date: 14.02.2019: ARGLO_SUBTYP14.02.2019: ARGLO_EXCOMP14.02.2019: ARGLO_REG
Version #: 1.0
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 .



Disclaimer:

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.