1. Identification

1.1. Product identifier

Trade name

PERACLEAN® 5 (FL9898)

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified

Biocide

For industrial use

Function

Bactericide

1.3. Details of the supplier of the safety data sheet

Company

Evonik Corporation USA
299 Jefferson Road
Parsippany, NJ 07054-0677
USA

Telephone

973-929-8000

Telefax

973-929-8040

Email address

Product-Regulatory-Services@Evonik.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
973-929-8060

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

Signal word: Danger

Hazard statement:
- 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.
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.

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.
- P390 - Absorb spillage to prevent material damage.
- P391 - Collect spillage.

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.

Disposal:
- P501 - Dispose of contents/ container to an approved waste disposal plant.

Supplemental hazard information / Label elements

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
  4.5% - 5.4%
  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
  6% - 10%
  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
Strongly 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!

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.

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.

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.).

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.
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.
Ensure tightness at all times. Avoid leakage.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Only use containers which are specially permitted for: Peracetic acid.
and/or
For transport, storage and tank installations only use suitable materials.

Suitable materials
- stainless steel (1.4571)
- polyethylene, polypropylene, polyvinyl chloride (PVC),
- polytetrafluoroethylene, glass, ceramics.

Unsuitable materials
- Mild steel, Iron, Copper, brass, Bronze, Aluminium, 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**

<table>
<thead>
<tr>
<th></th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Type of exposure</th>
<th>Control parameters</th>
<th>Exposure limit (PEL):</th>
</tr>
</thead>
</table>
| **Peracetic acid**   | 79-21-0      | 0.4 ppm            | Inhalable fraction and vapor.         | 1 ppm              | 1.4 mg/m³ \(1.4 \text{ mg/m}^3\) OEL (US CA)
|                      |              |                    |                                       | 1.4 mg/m³          | 25 mg/m³ \(25 \text{ mg/m}^3\) OEL (US CA)
| **Hydrogen peroxide solution** | 7722-84-1  | 1 ppm              | Time Weighted Average (TWA): \(1 \text{ ppm} \) \(1 \text{ ppm} \) OEL (US CA)
|                      |              | 1.4 mg/m³          | Permissible exposure limit: \(1.4 \text{ mg/m}^3\) OEL (US CA Z1)
|                      |              |                    |                                       |                    | 10 ppm \(10 \text{ ppm} \) OEL (US CA Z1)
| **Acetic acid**      | 64-19-7      | 10 ppm             | Time Weighted Average (TWA): \(10 \text{ ppm} \) \(10 \text{ ppm} \) OEL (US CA)
|                      |              | 25 mg/m³           | Permissible exposure limit: \(25 \text{ mg/m}^3\) OEL (US CA Z1)
|                      |              |                    |                                       | 10 ppm \(10 \text{ ppm} \) OEL (US CA Z1)
|                      |              |                    |                                       | 25 mg/m³           | 40 ppm \(40 \text{ ppm} \) OEL (US CA Z1)
|                      |              |                    |                                       | 40 ppm             | 25 mg/m³ \(25 \text{ mg/m}^3\) OEL (US CA Z1)
|                      |              |                    |                                       |                    | 15 ppm \(15 \text{ ppm} \) OEL (US CA Z1)
|                      |              |                    |                                       | 15 ppm             | 37 mg/m³ \(37 \text{ mg/m}^3\) OEL (US CA Z1)
|                      |              |                    |                                       | 15 ppm             | 37 mg/m³ \(37 \text{ mg/m}^3\) OEL (US CA Z1)

**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**

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
disposable gloves
Glove material Natural Rubber/Natural latex (NR)
Material thickness 0.22 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.

**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.
Protective measures
Handle in accordance with good industrial hygiene and safety practice. 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. Wear suitable protective clothing, gloves and eye/face protection.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless, clear</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Stinging</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>ca. 0.6 (20 °C) Medium: Product</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>ca. -28 °C</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>not applicable decomposition</td>
</tr>
<tr>
<td>Flash point</td>
<td>Method: ISO 2719 not measureable (formation of foam) not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>ca. 27 hPa (20 °C)</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>ca. 1.12 g/cm³ (20 °C)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Completely miscible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: -1.25 (calculated)</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>395 °C Method: DIN 51 794</td>
</tr>
</tbody>
</table>
Thermal decomposition >= 60 °C
self-accelerating decomposition

Viscosity, dynamic not determined

Viscosity, kinematic ca. 1.19 mm²/s (20 °C)
Method: DIN 51 562

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
Surface tension ca. 53 mN/m(20 °C)
Method: ISO 3696
Bulk density not applicable
Metal corrosion Corrosive to metals

speed of hydrolysis
Method: 92/69/EEC, C.7

half-life period: 48 h (25 °C) (pH 4)

half-life period: 48 h (25 °C) (pH 7)

half-life period: 3.6 h (25 °C) (pH 9)

tested substance: peracetic acid

Other information oxidising agent

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.
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

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(male/female): 50 - 500 mg/kg
  - Method: analogy OECD TG 401
  - Test substance: peracetic acid 35 %

  - LD50 Rat(female): 1859 mg/kg
  - Method: analogy OECD TG 401
  - Test substance: peracetic acid 5 %

- **Acute inhalation toxicity**
  - LC50 Rat(male/female): 4.08 mg/l / 4 h / Aerosol
  - Test substance: peracetic acid 5 %

  - RD50 Mouse(male): 0.012 mg/l / 1 h / vapour
  - Test substance: Peracetic acid 36 %
SAFETY DATA SHEET
PERACLEAN® 5

Material no. 100342
Specification
Revision date 05/20/2015
Print Date 05/22/2015
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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 %

Acute dermal toxicity
LD50 Rabbit(female): 1040 mg/kg
Method: US-EPA-method
Test substance: peracetic acid 5 %

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 5 %

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 %

Assessment of STOT single exposure

LC50 Rat(male): > 0.5 mg/l / 4 h / vapour
Method: OECD Test Guideline 403
Test substance: Peracetic acid 36 %

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:
NOAEL F1: 12.5 mg/kg
Method: OECD TG 414
Test substance: peracetic acid 100 %

12. Ecological information
12.1. Toxicity
Toxicity to fish
LC50 Oncorhynchus mykiss: 0.53 mg/l / 96 h
Test substance: peracetic acid 100 %
Method: OECD TG 203

Toxicity in aquatic
EC50 static test Daphnia magna: 0.73 mg/l / 48 h
invertebrates

Test substance: peracetic acid 100 %
Method: OECD Test Guideline 202

Toxicity to algae

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

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

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.

14. Transport information

D.O.T. Road/Rail
14.1. UN number: UN 3149
14.2. UN proper shipping name: Hydrogen peroxide and peroxyacetic acid mixtures, stabilized
14.3. Transport hazard class(es): 5.1 (8)
14.4. Packing group: II
14.5. Environmental hazards (Marine pollutant): --
14.6. Special precautions for user: Yes
ROAD: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-(CFR) Regulation!
RAIL: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-(CFR) Regulation!
Protect from thermal radiation.
SAFETY DATA SHEET

PERACLEAN® 5

Material no. Specification Order Number
100342

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Air transport ICAO-TI/IATA-DGR

14.1. UN number: UN 3149
14.2. UN proper shipping name: Hydrogen peroxide and peroxyacetic acid mixture, stabilized
14.3. Transport hazard class(es): 5.1 (8)
14.4. Packing group: II
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!
   IATA-P: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!
   Protect from thermal radiation.

Sea transport IMDG-Code/GGVSee (Germany)

14.1. UN number: UN 3149
14.2. UN proper shipping name: HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, STABILIZED
14.3. Transport hazard class(es): 5.1 (8)
14.4. Packing group: II
14.5. Environmental hazards (Marine pollutant):
14.6. Special precautions for user: Yes
   EmS: F-H,S-Q
   Protect from heat. Separate from metal powders and permangan ates. "Separated from" permanganates and class 4.1.
   FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!
   Protect from thermal radiation.
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: for transport approval see regulatory information

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 IRREVERSIBLE 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 73529 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

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 : 1
  Physical Hazard : 2

NFPA Ratings

  Health : 3
  Flammability : 1
  Reactivity : 2

16. Other 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.
Further information about the characteristics of the product can be found in the product code of practice or in the Product-Brochure.

Revision date 05/20/2015

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
| SAFETY DATA SHEET |
|-------------------|------------------|
| PERACLEAN® 5      |                  |
| Material no.      | Version          | 5.0 / US |
| Specification     | Revision date    | 05/20/2015 |
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**voc** volatile organic compounds

**WHMIS** Workplace Hazardous Materials Information System

**WHO** World Health Organization