1. Identification

1.1. Product identifier

Trade name: PERACLEAN® 5

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified: Biocide
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)

- Oxidizing liquids: Category 2 H272
- 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

2.2. Label elements

Statutory basis: Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
### SAFETY DATA SHEET

**PERACLEAN® 5**

<table>
<thead>
<tr>
<th>Material no.</th>
<th>Specification</th>
<th>Order Number</th>
<th>Version</th>
<th>Revision date</th>
<th>Print Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100342</td>
<td></td>
<td>7.0 / US</td>
<td>02/22/2016</td>
<td>02/24/2016</td>
<td>2 / 20</td>
</tr>
</tbody>
</table>

#### hazard-defining component(s) (GHS)
- Hydrogen peroxide solution
- Acetic acid
- Peracetic acid

#### Signal word
- Danger

#### Hazard statement
- **H272** - May intensify fire; oxidiser.
- **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.
- **H335** - May cause respiratory irritation.

#### Precautionary statement:
**Prevention**
- **P210** - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- **P220** - Keep/Store away from clothing/ combustible materials.
- **P221** - Take any precaution to avoid mixing with combustibles.
- **P234** - Keep only in original packaging.
- **P260** - Do not breathe 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.

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

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

#### Supplemental hazard information / Label elements

**2.3. Other hazards**
- Risk of decomposition in contact with incompatible substances, impurities, metals, alkalis, reducing agents.
- Danger of decomposition if exposed to heat
- See also section 10.
Use biocides safely. Always read the label and product information before use. Corrosive to the respiratory tract.

3. **Composition/information on ingredients**

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

<table>
<thead>
<tr>
<th><strong>• Peracetic acid</strong></th>
<th>4.5% - 5.4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS-No.</td>
<td>79-21-0</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 3</td>
</tr>
<tr>
<td>Organic peroxides</td>
<td>Type D</td>
</tr>
<tr>
<td>Acute toxicity (Oral)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute toxicity (Inhalation)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute toxicity (Dermal)</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion</td>
<td>Category 1A</td>
</tr>
<tr>
<td>Serious eye damage</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure (Respiratory system)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 1</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Category 1</td>
</tr>
<tr>
<td>M-factor (aquatic, acute)</td>
<td>1</td>
</tr>
<tr>
<td>M-factor (aquatic, chronic)</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>• Hydrogen peroxide solution</strong></th>
<th>20% - 30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS-No.</td>
<td>7722-84-1</td>
</tr>
<tr>
<td>Oxidizing liquids</td>
<td>Category 1</td>
</tr>
<tr>
<td>Acute toxicity (Oral)</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion</td>
<td>Category 1A</td>
</tr>
<tr>
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<td>Category 3</td>
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<tr>
<td>Chronic aquatic toxicity</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>• Acetic acid</strong></th>
<th>6% - 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS-No.</td>
<td>64-19-7</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 3</td>
</tr>
<tr>
<td>Skin corrosion</td>
<td>Category 1A</td>
</tr>
<tr>
<td>Serious eye damage</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

**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, vertigo, somnolence (sleepiness), nausea.
Health injuries may be delayed.

Hazards
Strongly irritating to corrosive.
Harmful in contact with skin and if swallowed.
Vapours may cause drowsiness and dizziness.

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. Wear personal protective equipment; see section 8.

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**


**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)
Suitable materials
polyethylene, polypropylene, polyvinyl chloride (PVC),
Suitable materials
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).
## Exposure controls/personal protection

### Control parameters

#### Peracetic acid

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Type of exposure</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-21-0</td>
<td>0.4 ppm</td>
<td>Inhalable fraction and vapor.</td>
<td>STEL: (ACGIH)</td>
</tr>
</tbody>
</table>

#### Hydrogen peroxide solution

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Type of exposure</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>7722-84-1</td>
<td>1 ppm 1.4 mg/m³</td>
<td>Time Weighted Average (TWA): (ACGIH)</td>
<td>Exposure Limit (PEL): (OSHA Z1)</td>
</tr>
</tbody>
</table>

#### Acetic acid

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Type of exposure</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-19-7</td>
<td>15 ppm</td>
<td>Time Weighted Average (TWA): (ACGIH)</td>
<td>Exposure Limit (PEL): (US CA OEL)</td>
</tr>
<tr>
<td></td>
<td>10 ppm 25 mg/m³</td>
<td>Permissible exposure limit: (OSHA Z1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 ppm 37 mg/m³</td>
<td>Short Term Exposure Limit (STEL): (US CA OEL)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40 ppm</td>
<td>Ceiling Limit Value: (US CA OEL)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 ppm 25 mg/m³</td>
<td>Time Weighted Average (TWA) Permissible Exposure Limit (PEL): (US CA OEL)</td>
<td></td>
</tr>
</tbody>
</table>

### 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.

### 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.
### SAFETY DATA SHEET

**PERACLEAN® 5**

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**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
- Natural Rubber/Natural latex (NR)

**Material thickness**

- 0.65 mm
- 0.22 mm

**Break through time**

- > 480 min

**Method**

DIN EN 374

**Disposabale gloves**

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

#### 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. 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.

### 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. -28 °C
- **Boiling point/range**: not applicable
  - decomposition
  - > 60 °C
- **Flash point**: Method: ISO 2719
  - not measureable (formation of foam)
  - not applicable
- **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. 27 hPa (20 °C)
- **Vapour density**: No data available
- **Relative density**: No data available
- **Density**: ca. 1.12 g/cm³ (20 °C)
- **Water solubility**: completely miscible
- **Partition coefficient: n-octanol/water**: log Pow: -1.25 (calculated)
- **Autoignition temperature**: 395 °C
  - Method: DIN 51 794
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  
not oxidizing  
Method: UN Test O.2 (oxidizing liquids)

Surface tension  
ca. 53 mN/m(20 °C)  
Method: ISO 3696

Bulk density  
not applicable

Metal corrosion  
Corrosive to metals

speed of hydrolysis  
half-life period: 48 h  
Method: 92/69/EEC, C.7  
(25 °C) (pH 4)

half-life period: 48 h  
Method: 92/69/EEC, C.7  
(25 °C) (pH 7)

half-life period: 3.6 h  
Method: 92/69/EEC, C.7  
(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.

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

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
Method: US-EPA-method
Test substance: peracetic acid 5 %

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
Acute dermal toxicity
LD50 Rabbit(female): 1040 mg/kg
Method: OECD Test Guideline 403
Test substance: Peracetic acid 36 %

LD50 Rabbit(male/female): 1957 mg/kg
Method: US-EPA-method
Test substance: peracetic acid 5 %

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 %

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:
NOAEL (No Observed Adverse Effect Level) of parents:
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 invertebrates
EC50 static test Daphnia magna: 0.73 mg/l / 48 h
Test substance: peracetic acid 100 %
Method: OECD Test Guideline 202

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

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): Yes
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.

Air transport ICAO-TI/IATA-DGR
SAFETY DATA SHEET

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Material no. Specification 100342
Order Number

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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): Yes
14.6. Special precautions for user: Yes
   EmS: F-H,S-Q
   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!
   Protect from thermal radiation.

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
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<tbody>
<tr>
<td>Health</td>
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<tr>
<td>Flammability</td>
<td>1</td>
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<tr>
<td>Physical Hazard</td>
<td>2</td>
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NFPA Ratings

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
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<tbody>
<tr>
<td>Health</td>
<td>3</td>
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<tr>
<td>Flammability</td>
<td>1</td>
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<tr>
<td>Reactivity</td>
<td>2</td>
</tr>
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</table>

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.

Revision date 02/22/2016

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

<p>| 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 |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>NOAEL</td>
<td>No observed adverse effect level</td>
</tr>
<tr>
<td>NOEC</td>
<td>no observed effect concentration</td>
</tr>
<tr>
<td>NOEL</td>
<td>no observed effect level</td>
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<tr>
<td>o. c.</td>
<td>open cup</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
</tr>
<tr>
<td>OEL</td>
<td>Occupational Exposure Limit</td>
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<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, bioaccumulative, toxic</td>
</tr>
<tr>
<td>PEC</td>
<td>Predicted effect concentration</td>
</tr>
<tr>
<td>PNEC</td>
<td>Predicted no effect concentration</td>
</tr>
<tr>
<td>RQ</td>
<td>Reportable Quantity</td>
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<tr>
<td>SDS</td>
<td>Safety Data Sheet</td>
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<tr>
<td>STOT</td>
<td>Specific Target Organ Toxicity</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>vPvB</td>
<td>very persistent, very bioaccumulative</td>
</tr>
<tr>
<td>voc</td>
<td>volatile organic compounds</td>
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<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
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<td>WHO</td>
<td>World Health Organization</td>
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**SAFETY DATA SHEET**

**PERACLEAN® 5**

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**Terms**

- SAFETY DATA SHEET
- PERACLEAN® 5
- Material no.
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**Abbreviations**

- NOAEL: No observed adverse effect level
- NOEC: No observed effect concentration
- NOEL: No observed effect level
- OEL: Occupational Exposure Limit
- OECD: Organisation for Economic Cooperation and Development
- 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