SAFETY DATA SHEET

VORTEXX

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : VORTEXX
Other means of identification : not applicable
Recommended use : Sanitizer - Food contact surface
Restrictions on use : Reserved for industrial and professional use.
Product dilution information : No dilution information provided.
Company : Ecolab Inc.
370 N. Wabasha Street
St. Paul, Minnesota USA 55102
1-800-352-5326
Emergency telephone : 1-800-328-0026 (US/Canada), 1-651-222-5352 (outside US)
Issuing date : 06/04/2014

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Oxidizing liquids : Category 2
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin corrosion : Category 1A
Serious eye damage : Category 1

GHS Label element
Hazard pictograms :

Signal Word : Danger
Hazard Statements : May intensify fire; oxidizer.
Harmful if swallowed or if inhaled.
Causes severe skin burns and eye damage.

Precautionary Statements : Prevention:
Keep away from heat. Keep/Store away from clothing/ combustible materials. Take any precaution to avoid mixing with combustibles. Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing/ eye protection/ face protection. Warning! Do not use together with other products. May release dangerous gases (chlorine).

Response:
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position 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 or doctor/physician. Wash contaminated clothing before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage:**
Store locked up.

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

### Other hazards
None known.

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen peroxide</td>
<td>7722-84-1</td>
<td>6.9</td>
</tr>
<tr>
<td>Peroxyacetic acid</td>
<td>79-21-0</td>
<td>4.4</td>
</tr>
<tr>
<td>Octanoic acid</td>
<td>124-07-2</td>
<td>3.3</td>
</tr>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Secondary Alkanesulphonates</td>
<td>5324-84-5</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

#### SECTION 4. FIRST AID MEASURES

**In case of eye contact**: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

**In case of skin contact**: Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**If swallowed**: Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**If inhaled**: Remove to fresh air. Treat symptomatically. Get medical attention.

**Protection of first-aiders**: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Notes to physician**: Treat symptomatically.

*See toxicological information (Section 11)*

#### SECTION 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**: None known.

**Specific hazards during fire fighting**: Oxidizer. Contact with other material may cause fire.

**Hazardous combustion products**: Carbon oxides
Special protective equipment for fire-fighters: Use personal protective equipment.

Specific extinguishing methods: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions: Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up: Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: Do not ingest. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation. Warning! Do not use together with other products. May release dangerous gases (chlorine).


Storage temperature: -30 °C to 40 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Form of exposure</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>TWA</td>
<td>10 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm 37 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm 25 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>Hydrogen peroxide</td>
<td>7722-84-1</td>
<td>TWA</td>
<td>10 ppm 25 mg/m3</td>
<td>OSHA Z1</td>
</tr>
</tbody>
</table>

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Engineering measures: Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection: Safety goggles
Face-shield

Hand protection: Wear the following personal protective equipment: Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection: Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: colorless
Odor: pungent
pH: 0.9, 100%
Flash point: not applicable
Odor Threshold: no data available
Melting point/freezing point: no data available
Initial boiling point and boiling range: no data available
Evaporation rate: no data available
Flammability (solid, gas): no data available
Upper explosion limit: no data available
Lower explosion limit: no data available
Vapor pressure: no data available
Relative vapor density: no data available
Relative density: 1.082
Water solubility: no data available
Solubility in other solvents: no data available
Partition coefficient: n-: no data available
octanol/water
Autoignition temperature : no data available
Thermal decomposition : no data available
Viscosity, kinematic : no data available
Explosive properties : no data available
Oxidizing properties : no data available
Molecular weight : no data available
VOC : no data available

SECTION 10. STABILITY AND REACTIVITY
Chemical stability : pressure build-up
Possibility of hazardous reactions : Warning! Do not use together with other products. May release dangerous gases (chlorine).
Conditions to avoid : None known.
Incompatible materials : Bases
                      Metals
                      Organic materials
Hazardous decomposition products : Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects
Eyes : Causes serious eye damage.
Skin : Causes severe skin burns.
Ingestion : Causes digestive tract burns.
Inhalation : May cause nose, throat, and lung irritation.
Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure
Eye contact : Redness, Pain, Corrosion
Skin contact : Redness, Pain, Corrosion
Ingestion : Corrosion, Abdominal pain
Inhalation : Respiratory irritation, Cough

Toxicity
Acute oral toxicity : no data available
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Acute inhalation toxicity : no data available
Acute dermal toxicity : Acute toxicity estimate: 3,705 mg/kg
Skin corrosion/irritation : no data available
Serious eye damage/eye irritation : no data available
Respiratory or skin sensitization : no data available
Carcinogenicity

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive effects : no data available
Germ cell mutagenicity : no data available
Teratogenicity : no data available
STOT-single exposure : no data available
STOT-repeated exposure : no data available
Aspiration toxicity : no data available

Ingredients

Acute oral toxicity
Hydrogen peroxide
LD50 rat 486 mg/kg
Peroxyacetic acid
LD50 rat 1,634 mg/kg
Octanoic acid
LD50 rat > 2,000 mg/kg
Acetic acid
LD50 rat 3,310 mg/kg
Secondary Alkanesulphonates
LD50 rat > 5,000 mg/kg

Ingredients

Acute inhalation toxicity
Peroxyacetic acid
4 h LC50 rat: 5.175 mg/l
Octanoic acid
4 h LC50 rat: > 4.6 mg/l
Acetic acid
4 h LC50 rat: > 40 mg/l
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Environmental Effects: This product has no known ecotoxicological effects.

Product
Toxicity to fish: no data available
Toxicity to daphnia and other aquatic invertebrates: no data available
Toxicity to algae: no data available

Ingredients
Toxicity to fish:
- Peroxyacetic acid
  96 h LC50: 0.8 mg/l
- Octanoic acid
  96 h LC50 Fish: 22 mg/l
- Acetic acid
  96 h LC50: 75 mg/l

Toxicity to daphnia and other aquatic invertebrates:
- Peroxyacetic acid
  48 h EC50: 0.73 mg/l
- Secondary Alkanesulphonates
  48 h EC50 Daphnia: 3,200 mg/l

Toxicity to algae:
- Peroxyacetic acid
  72 h EC50: 1.38 mg/l
- Peroxyacetic acid
  72 h EC50: 0.7 mg/l

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

Other adverse effects
no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods: The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
**Disposal considerations**: Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.


## SECTION 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

### Land transport (DOT)
- **UN number**: 3109
- **Description of the goods**: Organic peroxide type F, liquid (Peroxyacetic acid)
- **Class**: 5.2 (8)
- **Packing group**: II
- **Environmentally hazardous**: no

### Sea transport (IMDG/IMO)
- **UN number**: 3109
- **Description of the goods**: ORGANIC PEROXIDE TYPE F, LIQUID (Peroxyacetic acid)
- **Class**: 5.2 (8)
- **Marine pollutant**: no

## SECTION 15. REGULATORY INFORMATION

### EPA Registration number
- **EPA Registration number**: 1677-158

### EPCRA - Emergency Planning and Community Right-to-Know

#### CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>5000</td>
<td>20833</td>
</tr>
</tbody>
</table>

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peroxyacetic acid</td>
<td>79-21-0</td>
<td>500</td>
<td>11364</td>
</tr>
</tbody>
</table>

### SARA 311/312 Hazards
- Acute Health Hazard
- Fire Hazard

### SARA 302
- The following components are subject to reporting levels established by SARA Title III, Section 302:
  - Peroxyacetic acid 79-21-0 4.4 %

### SARA 313
- The following components are subject to reporting levels established by SARA Title III, Section 313:
California Prop 65
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

1907/2006 (EU) :
not determined

Switzerland. New notified substances and declared preparations :
not determined

United States TSCA Inventory :
On TSCA Inventory

Canadian Domestic Substances List (DSL) :
This product contains one or several components listed in the Canadian NDSL.

Australia Inventory of Chemical Substances (AICS) :
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemical Substances :
not determined

Japan. ENCS - Existing and New Chemical Substances Inventory :
not determined

Japan. ISHL - Inventory of Chemical Substances (METI) :
On the inventory, or in compliance with the inventory

Korea. Korean Existing Chemicals Inventory (KECI) :
not determined

Philippines Inventory of Chemicals and Chemical Substances (PICCS) :
not determined

China. Inventory of Existing Chemical Substances in China (IECSC) :
not determined

SECTION 16. OTHER INFORMATION
Issuing date : 06/04/2014
Version : 1.0
Prepared by : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.