SAFETY DATA SHEET
Betco Symplicity Sanibet Multi-Range

Section 1. Identification

<table>
<thead>
<tr>
<th>Product identifier</th>
<th>Betco Symplicity Sanibet Multi-Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>237</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
<tr>
<td>Product type</td>
<td>Liquid</td>
</tr>
</tbody>
</table>

Relevant identified uses of the substance or mixture and uses advised against

<table>
<thead>
<tr>
<th>Identified uses</th>
<th>Sanitizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses advised against</td>
<td>Reason</td>
</tr>
<tr>
<td>For Industrial and Institutional Use Only</td>
<td>-</td>
</tr>
</tbody>
</table>

Supplier's details

<table>
<thead>
<tr>
<th>Supplier's details</th>
<th>Betco Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1690 Huron Church Road, Suite 169</td>
</tr>
<tr>
<td></td>
<td>Windsor ON N9C0AC CA</td>
</tr>
<tr>
<td></td>
<td>400 Van Camp Road</td>
</tr>
<tr>
<td></td>
<td>Bowling Green, OH 43402 US</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.betco.com">www.betco.com</a></td>
</tr>
<tr>
<td></td>
<td>888-462-3826</td>
</tr>
</tbody>
</table>

Emergency telephone number (with hours of operation)

| Emergency telephone number (with hours of operation) | Chemtrec (800) 424-9300 24 hour |

Section 2. Hazard identification

Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification of the substance or mixture</th>
<th>FLAMMABLE LIQUIDS - Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SKIN CORROSION - Category 1B</td>
</tr>
<tr>
<td></td>
<td>SERIOUS EYE DAMAGE - Category 1</td>
</tr>
</tbody>
</table>

GHS label elements

| Hazard pictograms | : |

Signal word

| Signal word | Danger |

Hazard statements

<table>
<thead>
<tr>
<th>Hazard statements</th>
<th>Combustible liquid.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
</tbody>
</table>

Precautionary statements

<table>
<thead>
<tr>
<th>Precautionary statements</th>
<th>Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wear protective gloves. Wear protective clothing: Recommended: Chemical resistant gloves. Wear eye or face protection: Recommended: splash goggles. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wash hands thoroughly after handling.</td>
</tr>
</tbody>
</table>

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Section 2. Hazard identification

Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. 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 physician.

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1.8%
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1.8%

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

Other means of identification: Not available.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides</td>
<td>1 - 5</td>
<td>68424-85-1</td>
</tr>
<tr>
<td>decyldimethyloctylammonium chloride</td>
<td>1 - 5</td>
<td>32426-11-2</td>
</tr>
<tr>
<td>N,N-didecyl-N,N-dimethyl ammonium chloride</td>
<td>1 - 5</td>
<td>7173-51-5</td>
</tr>
<tr>
<td>ethanol</td>
<td>1 - 5</td>
<td>64-17-5</td>
</tr>
<tr>
<td>dimethyldioctylammonium chloride</td>
<td>1 - 5</td>
<td>5538-94-3</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact

Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation

Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact

Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Section 4. First-aid measures

Ingestion: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- **Eye contact**: Causes serious eye damage.
- **Inhalation**: No known significant effects or critical hazards.
- **Skin contact**: Causes severe burns.
- **Ingestion**: No known significant effects or critical hazards.

Over-exposure signs/symptoms

- **Eye contact**: Adverse symptoms may include the following:
  - pain
  - watering
  - redness

- **Inhalation**: No specific data.

- **Skin contact**: Adverse symptoms may include the following:
  - pain or irritation
  - redness
  - blistering may occur

- **Ingestion**: Adverse symptoms may include the following:
  - stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

- **Notes to physician**: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

- **Specific treatments**: No specific treatment.

- **Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**

- **Suitable extinguishing media**: Use dry chemical, CO₂, water spray (fog) or foam.

- **Unsuitable extinguishing media**: Do not use water jet.

**Specific hazards arising from the chemical**: Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
Section 5. Fire-fighting measures

Hazardous thermal decomposition products: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- halogenated compounds
- metal oxide/oxides

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.
Section 7. Handling and storage

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 1000 ppm 8 hours. 8 hrs OEL: 1880 mg/m³ 8 hours. CA Quebec Provincial (Canada, 1/2014). TWAEV: 1000 ppm 8 hours. TWAEV: 1880 mg/m³ 8 hours. CA British Columbia Provincial (Canada, 7/2018). STEL: 1000 ppm 15 minutes. CA Ontario Provincial (Canada, 1/2018). STEL: 1000 ppm 15 minutes. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: splash goggles.
Section 8. Exposure controls/personal protection

**Skin protection**

**Hand protection**

- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection**

- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Chemical resistant gloves

**Other skin protection**

- Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**

- Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

**Appearance**

- **Physical state**: Liquid.
- **Color**: Clear. Red.-Pink
- **Odor**: Mild. Sweetish.
- **Odor threshold**: Not available.
- **pH**: 6 to 9
- **Melting point**: Not available.
- **Boiling point**: Not available.
- **Flash point**: Closed cup: >65°C (>149°F) [Product does not sustain combustion.]
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not available.
- **Lower and upper explosive (flammable) limits**: Not available.
- **Vapor pressure**: Not available.
- **Vapor density**: Not available.
- **Relative density**: 0.98
- **Solubility**: Easily soluble in the following materials: cold water and hot water.
- **Solubility in water**: Not available.
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: Not available.
- **Decomposition temperature**: Not available.
- **Viscosity**: Not available.
- **Flow time (ISO 2431)**: Not available.

Section 10. Stability and reactivity

- **Reactivity**: No specific test data related to reactivity available for this product or its ingredients.
- **Chemical stability**: The product is stable.
- **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.
Section 10. Stability and reactivity

**Conditions to avoid**
Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**Incompatible materials**
Not available.

**Hazardous decomposition products**
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

**Information on toxicological effects**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>426 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>N,N-didecyl-N,N-dimethyl ammonium chloride</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>84 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>ethanol</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>124700 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td>LD50 Oral</td>
<td></td>
<td>Rat</td>
<td>7 g/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides</td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>25 milligrams</td>
</tr>
<tr>
<td>N,N-didecyl-N,N-dimethyl ammonium chloride ethanol</td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
</tr>
<tr>
<td>ethanol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>0.066666667 minutes</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 microliters</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>400 milligrams</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sensitization**
Not available.

**Mutagenicity**
Not available.

**Carcinogenicity**
Not available.

**Reproductive toxicity**
Not available.

**Teratogenicity**
Not available.

**Specific target organ toxicity (single exposure)**

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Date of previous issue : 4/3/2020  
Version : 1.11  
7/12
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>dimethyldioctylammonium chloride</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure**

Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential acute health effects**

- **Eye contact**
  - Causes serious eye damage.

- **Inhalation**
  - No known significant effects or critical hazards.

- **Skin contact**
  - Causes severe burns.

- **Ingestion**
  - No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **Eye contact**
  - Adverse symptoms may include the following:
    - pain
    - watering
    - redness

- **Inhalation**
  - No specific data.

- **Skin contact**
  - Adverse symptoms may include the following:
    - pain or irritation
    - redness
    - blistering may occur

- **Ingestion**
  - Adverse symptoms may include the following:
    - stomach pains

**Delayed and immediate effects and also chronic effects from short and long term exposure**

- **Short term exposure**
  - Potential immediate effects: Not available.
  - Potential delayed effects: Not available.

- **Long term exposure**
  - Potential immediate effects: Not available.
  - Potential delayed effects: Not available.

**Potential chronic health effects**

Not available.

- **General**
  - No known significant effects or critical hazards.

- **Carcinogenicity**
  - No known significant effects or critical hazards.

- **Mutagenicity**
  - No known significant effects or critical hazards.

- **Teratogenicity**
  - No known significant effects or critical hazards.

- **Developmental effects**
  - No known significant effects or critical hazards.

- **Fertility effects**
  - No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**
**Section 11. Toxicological information**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>2716.04 mg/kg</td>
</tr>
</tbody>
</table>

**Section 12. Ecological information**

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides</td>
<td>Acute EC50 37 ppb Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 4.15 ppb Fresh water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 32.2 ppb</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 110 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 14.22 ppb Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 18 ppb Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 39 µg/l Marine water</td>
<td>Crustaceans - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.01 µg/l Fresh water</td>
<td>Fish - Acipenser transmontanus - Larvae</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 25 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata - Exponential growth phase</td>
<td></td>
</tr>
<tr>
<td>N,N-didecyl-N,N-dimethyl ammonium chloride</td>
<td>Acute LC50 64 ppb Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 4.15 ppb Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Acute NOEC 32.2 ppb</td>
<td>F</td>
<td>34 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 110 µg/l Fresh water</td>
<td>Algae - Chlorella pyrenoidosa - Exponential growth phase</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 14.22 ppb Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 18 ppb Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 39 µg/l Marine water</td>
<td>Crustaceans - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.01 µg/l Fresh water</td>
<td>Fish - Acipenser transmontanus - Larvae</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 25 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata - Exponential growth phase</td>
<td></td>
</tr>
<tr>
<td>ethanol</td>
<td>Chronic NOEC 125 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 17.921 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td>dimethyldioctylammonium chloride</td>
<td>Acute LC50 25500 µg/l Marine water</td>
<td>Crustaceans - Artemia franciscana - Larvae</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 42000 µg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 4.995 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 100 µl/L Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.375 µl/L Fresh water</td>
<td>Fish - Gambusia holbrooki - Larvae</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.1 ppm Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.7 ppm Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Persistence and degradability**

Not available.

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPow</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>-0.35</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

**Soil/water partition coefficient (Koc)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.
Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>TDG Classification</th>
<th>DOT Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
</table>

Environment hazards: Yes. The environmentally hazardous substance mark is not required.

DOT Classification: This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.
Section 14. Transport information

ADR/RID : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : The following components are listed: ammonia (total); ammonia (total); ammonia (total); ethanol; ammonia (total)

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list

Australia : Not determined.
Canada : All components are listed or exempted.
China : All components are listed or exempted.
Europe : All components are listed or exempted.
Japan : Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Malaysia : Not determined.
New Zealand : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.
Thailand : Not determined.
Turkey : Not determined.
United States : All components are listed or exempted.
Viet Nam : Not determined.

Date of issue/Date of revision : 4/3/2020
Date of previous issue : 4/3/2020
Version : 1.11
11/12
Section 16. Other information

History
Date of printing : 4/3/2020
Date of issue/Date of revision : 4/3/2020
Date of previous issue : 4/3/2020
Version : 1.11

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations
HPR = Hazardous Products Regulations

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABLE LIQUIDS - Category 4</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>SKIN CORROSION - Category 1B</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SERIOUS EYE DAMAGE - Category 1</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.