Section 1. Identification

1.1 Product identifier

- **Product name**: Twort's Fast Green
- **Part no.**: AR175
- **Validation date**: 12/11/2018

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

- **Material uses**: Laboratory use
  Container type: Dispenser Pack
  AR175 // Twort's Fast Green // Artisan Gram Stain Kit // 65 ml
  Reference number: SDS062

1.3 Details of the supplier of the safety data sheet

- **Supplier/Manufacturer**: Dako North America, Inc.
  6392 Via Real
  Carpinteria, California 93013
  United States
  Tel: (805) 566-6655
  www.Agilent.com

- **e-mail address of person responsible for this SDS**: SDS@Agilent.com

1.4 Emergency telephone number

- **In case of emergency**: CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

- **OSHA/HCS status**: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

2.2 GHS label elements

- **Hazard pictograms**: 

**Signal word**: Danger

**Hazard statements**: P227 - Combustible liquid.
H360 - May damage the unborn child.

**Precautionary statements**

- **Prevention**: P201 - Obtain special instructions before use.
  P202 - Do not handle until all safety precautions have been read and understood.
  P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
  P210 - Keep away from flames and hot surfaces. - No smoking.

- **Response**: P308 + P313 - IF exposed or concerned: Get medical attention.
Section 2. Hazards identification

Storage
- P405 - Store locked up.
- P403 - Store in a well-ventilated place.
- P235 - Keep cool.

Disposal
- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements
- Avoid contact with skin and clothing. Wash thoroughly after handling.

2.3 Other hazards

Hazards not otherwise classified
- Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>&lt;10</td>
<td>64-17-5</td>
</tr>
<tr>
<td>Methanol</td>
<td>&lt;1</td>
<td>67-56-1</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

4.1 Description of necessary first aid measures

Eye contact
- 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. Get medical attention.

Inhalation
- Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention. 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.

Skin contact
- Wash skin thoroughly with soap and water or use recognized skin cleanser. 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. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion
- 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. Get medical attention. 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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact
- No known significant effects or critical hazards.

Date of issue: 12/11/2018
## Section 4. First aid measures

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

### Skin contact
- Defatting to the skin. May cause skin dryness and irritation.

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

#### Over-exposure signs/symptoms

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Adverse symptoms may include the following: reduced fetal weight, increased in fetal deaths, skeletal malformations.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Adverse symptoms may include the following: irritation, dryness, cracking, reduced fetal weight, increased in fetal deaths, skeletal malformations.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Adverse symptoms may include the following: reduced fetal weight, increased in fetal deaths, skeletal malformations.</td>
</tr>
</tbody>
</table>

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

#### Notes to physician
- Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

#### 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

### 5.1 Extinguishing media

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

#### Unsuitable extinguishing media
- Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

#### 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.

#### Hazardous thermal decomposition products
- Decomposition products may include the following materials: carbon dioxide, carbon monoxide.

### 5.3 Advice for firefighters
Section 5. Fire-fighting measures

**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

**6.1 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. Avoid breathing 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".

**6.2 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).

**6.3 Methods and materials for containment and cleaning up**

**Methods for cleaning up**: 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.

Section 7. Handling and storage

**7.1 Precautions for safe handling**

**Protective measures**: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. 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.

**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.

**7.2 Conditions for safe storage, including any incompatibilities**: Specific storage conditions: Please consult the label.
Section 7. Handling and storage

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.

7.3 Specific end use(s)

Recommendations : Industrial applications, Professional applications.

Industrial sector specific solutions : Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>ACGIH TLV (United States, 3/2018).&lt;br&gt;STEL: 1000 ppm 15 minutes.&lt;br&gt;OSHA PEL 1989 (United States, 3/1989).&lt;br&gt;TWA: 1000 ppm 8 hours.&lt;br&gt;TWA: 1900 mg/m³ 8 hours.&lt;br&gt;NIOSH REL (United States, 10/2016).&lt;br&gt;TWA: 1000 ppm 10 hours.&lt;br&gt;TWA: 1900 mg/m³ 10 hours.&lt;br&gt;OSHA PEL (United States, 5/2018).&lt;br&gt;TWA: 1000 ppm 8 hours.&lt;br&gt;TWA: 1900 mg/m³ 8 hours.&lt;br&gt;ACGIH TLV (United States, 3/2018).&lt;br&gt;Absorbed through skin.&lt;br&gt;TWA: 200 ppm 8 hours.&lt;br&gt;TWA: 262 mg/m³ 8 hours.&lt;br&gt;STEL: 250 ppm 15 minutes.&lt;br&gt;STEL: 328 mg/m³ 15 minutes.&lt;br&gt;OSHA PEL 1989 (United States, 3/1989).&lt;br&gt;Absorbed through skin.&lt;br&gt;TWA: 200 ppm 8 hours.&lt;br&gt;TWA: 260 mg/m³ 8 hours.&lt;br&gt;STEL: 250 ppm 15 minutes.&lt;br&gt;STEL: 325 mg/m³ 15 minutes.&lt;br&gt;NIOSH REL (United States, 10/2016).&lt;br&gt;Absorbed through skin.&lt;br&gt;TWA: 200 ppm 10 hours.&lt;br&gt;TWA: 260 mg/m³ 10 hours.&lt;br&gt;STEL: 250 ppm 15 minutes.&lt;br&gt;STEL: 325 mg/m³ 15 minutes.&lt;br&gt;OSHA PEL (United States, 5/2018).&lt;br&gt;TWA: 200 ppm 8 hours.&lt;br&gt;TWA: 260 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

| Methanol        | Absorbed through skin.<br>TWA: 200 ppm 8 hours.<br>TWA: 262 mg/m³ 8 hours.<br>STEL: 250 ppm 15 minutes.<br>STEL: 328 mg/m³ 15 minutes. |

8.2 Exposure controls
Section 8. Exposure controls/personal protection

**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: safety glasses with side-shields.

**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.

**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

### 9.1 Information on basic physical and chemical properties

**Appearance**

- **Physical state**: Liquid.
- **Color**: Green.
- **Odor**: Alcohol-like.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point**: Not available.
- **Boiling point**: Not available.
- **Flash point**: Closed cup: >55°C (>131°F)
- **Evaporation rate**: Not available.

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Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 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.

10.5 Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials

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

Section 11. Toxicological information

11.1 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>Ethanol</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>124700 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>7 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>Methanol</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>145000 ppm</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Dermal</td>
<td>Rat</td>
<td>64000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rabbit</td>
<td>15800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rat</td>
<td>5600 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

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## Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>0.066666667 minutes 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>400 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Methanol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>40 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

### Sensitization
Not available.

### Mutagenicity
Conclusion/Summary: Not available.

### Carcinogenicity
Conclusion/Summary: Not available.

### Reproductive toxicity
Conclusion/Summary: Not available.

### Teratogenicity
Conclusion/Summary: Not available.

### Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td></td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td></td>
<td>Category 1</td>
<td>Not determined</td>
<td>central nervous system (CNS) and optic nerve</td>
</tr>
<tr>
<td></td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td></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.

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**Section 11. Toxicological information**

### Potential acute health effects

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>No specific data.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>Adverse symptoms may include the following:</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>Adverse symptoms may include the following:</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>Adverse symptoms may include the following:</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>No specific data.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>Adverse symptoms may include the following:</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>Adverse symptoms may include the following:</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>Adverse symptoms may include the following:</td>
</tr>
</tbody>
</table>

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

#### Short term exposure

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potential immediate effects</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Potential delayed effects</strong></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### Long term exposure

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potential immediate effects</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Potential delayed effects</strong></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Potential chronic health effects

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td>Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.</td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Mutagenicity</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Teratogenicity</strong></td>
<td>May damage the unborn child.</td>
</tr>
<tr>
<td><strong>Developmental effects</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Fertility effects</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

### Numerical measures of toxicity

#### Acute toxicity estimates

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Oral (mg/kg)</th>
<th>Dermal (mg/kg)</th>
<th>Inhalation (gases) (ppm)</th>
<th>Inhalation (vapors) (mg/l)</th>
<th>Inhalation (dusts and mists) (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>7000</td>
<td>100</td>
<td>N/A</td>
<td>300</td>
<td>N/A</td>
</tr>
<tr>
<td>Methanol</td>
<td>124.7</td>
<td>N/A</td>
<td>124.7</td>
<td>3</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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Section 11. Toxicological information

Section 12. Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</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></td>
<td>Acute LC50 25500 µg/l Marine water</td>
<td>Crustaceans - Artemia franciscana - Larvae</td>
<td>48 hours</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 ul/L Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.375 ul/L Fresh water</td>
<td>Fish - Gambusia holbrooki - Larvae</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Methanol</td>
<td>Acute LC50 2500000 µg/l Marine water</td>
<td>Crustaceans - Crangon crangon - Adult</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 3289 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 290 mg/l Fresh water</td>
<td>Fish - Danio rerio - Egg</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 9.96 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>-0.35</td>
<td>0.5</td>
<td>low</td>
</tr>
<tr>
<td>Methanol</td>
<td>-0.77</td>
<td>&lt;10</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods

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.

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**Section 13. Disposal considerations**

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.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

**Section 14. Transport information**

| DOT / TDG / Mexico / IMDG / IATA | Not regulated. |

**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**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**U.S. Federal regulations**

| Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) | Listed |
| Clean Air Act Section 602 Class I Substances | Not listed |
| Clean Air Act Section 602 Class II Substances | Not listed |
| DEA List I Chemicals (Precursor Chemicals) | Not listed |
| DEA List II Chemicals (Essential Chemicals) | Not listed |

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ**

**SARA 311/312 Classification**

Not applicable.

FLAMMABLE LIQUIDS - Category 4
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
HNOC - Defatting irritant

**Date of issue:** 12/11/2018
### Section 15. Regulatory information

#### Composition/Information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
</table>
| Ethanol   | <10| FLAMMABLE LIQUIDS - Category 2  
SKIN IRRITATION - Category 2A  
EYE IRRITATION - Category 2A  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
HNOC - Defatting irritant  
FLAMMABLE LIQUIDS - Category 2  
ACUTE TOXICITY (oral) - Category 3  
ACUTE TOXICITY (dermal) - Category 3  
ACUTE TOXICITY (inhalation) - Category 3  
SKIN IRRITATION - Category 2A  
EYE IRRITATION - Category 2A  
TOXIC TO REPRODUCTION (Unborn child) - Category 1B  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS), optic nerve) - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
| Methanol  | <1  | FLAMMABLE LIQUIDS - Category 2  
ACUTE TOXICITY (oral) - Category 3  
ACUTE TOXICITY (dermal) - Category 3  
ACUTE TOXICITY (inhalation) - Category 3  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
TOXIC TO REPRODUCTION (Unborn child) - Category 1B  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS), optic nerve) - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |

#### State regulations
- **Massachusetts**: The following components are listed: ETHYL ALCOHOL; DENATURED ALCOHOL
- **New York**: None of the components are listed.
- **New Jersey**: The following components are listed: ETHYL ALCOHOL; ALCOHOL
- **Pennsylvania**: The following components are listed: DENATURED ALCOHOL; ETHANOL

#### California Prop. 65

**WARNING**: This product can expose you to Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>-</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

#### 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.
- **UNECE Aarhus Protocol on POPs and Heavy Metals**: Not listed.

#### Inventory list
- **Australia**: All components are listed or exempted.
- **Canada**: All components are listed or exempted.
- **China**: All components are listed or exempted.

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Section 15. Regulatory information

Europe: All components are listed or exempted.
Japan: Japan inventory (ENCS): All components are listed or exempted.
          Japan inventory (ISHL): All components are listed or exempted.
New Zealand: All components are listed or exempted.
Philippines: All components are listed or exempted.
Republic of Korea: Not determined.
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.

Section 16. Other information

History

Date of issue: 12/11/2018
Date of previous issue: 07/31/2017
Version: 3
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
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973
          as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
UN = United Nations

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>TOXIC TO REPRODUCTION (Unborn child) - Category 1B</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Notice to reader

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