Section 1. Identification

1.1 Product identifier
Product name : Acid Alcohol 1 percent
Part no. : AR162, AR168, AR362
Validation date : 11/19/2021

1.2 Relevant identified uses of the substance or mixture and uses advised against
Material uses : Laboratory use
Container type: Dispenser Pack
AR162 // Acid Alcohol 1% // Artisan Acid-Fast Bacillus (AFB) Stain Kit // 65mL and 115 mL
AR168 // Acid Alcohol 1% // Artisan Mucicarmine Stain Kit // 65mL and 115 mL
AR362 // Acid Alcohol 1% // Artisan Acid-Fast Bacillus (AFB) Light Green Stain Kit // 65mL
Reference number: SDS003

1.3 Details of the supplier of the safety data sheet
Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
Tel: +1 800 227 9770

Agilent Technologies Singapore (International) Pte Ltd.
No. 1 Yishun Avenue 7
Singapore, 768923
Tel. (65) 6276 2622

Agilent Technologies Denmark ApS
Produktionsvej 42
2600 Glostrup,
Denmark
Tel. +45 44 85 95 00

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).

Classification of the substance or mixture
H225 FLAMMABLE LIQUIDS - Category 2
H290 CORROSIVE TO METALS - Category 1
H319 EYE IRRITATION - Category 2A
H371 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2

2.2 GHS label elements
Section 2. Hazards identification

Signal word: Danger

Hazard statements:
- H225 - Highly flammable liquid and vapor.
- H290 - May be corrosive to metals.
- H319 - Causes serious eye irritation.
- H371 - May cause damage to organs. (central nervous system (CNS), optic nerve)

Precautionary statements

Prevention:
- P280 - Wear eye or face protection.
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P241 - Use explosion-proof electrical, ventilating or lighting equipment.
- P242 - Use non-sparking tools.
- P243 - Take action to prevent static discharges.
- P234 - Keep only in original packaging.
- P233 - Keep container tightly closed.
- P260 - Do not breathe vapor.
- P270 - Do not eat, drink or smoke when using this product.

Response:
- P390 - Absorb spillage to prevent material damage.
- P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor.
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage:
- P403 + P235 - Store in a well-ventilated place. Keep cool.

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

Hazards not otherwise classified:
None known.

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>≥50 - ≤75</td>
<td>64-17-5</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>≤10</td>
<td>67-63-0</td>
</tr>
<tr>
<td>Methanol</td>
<td>≤4.7</td>
<td>67-56-1</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>≤2.5</td>
<td>7647-01-0</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 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. If necessary, call a poison center or physician.
Section 4. First aid measures

**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 following exposure or if feeling unwell. If necessary, call a poison center or physician. 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 contaminated skin with soap and water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**
Wash out mouth with water. Remove dentures if any. 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 following exposure or if feeling unwell. If necessary, call a poison center or 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.

4.2 Most important symptoms/effects, acute and delayed

**Potential acute health effects**

**Eye contact**
Causes serious eye irritation.

**Inhalation**
May cause damage to organs following a single exposure if inhaled.

**Skin contact**
May cause damage to organs following a single exposure in contact with skin.

**Ingestion**
May cause damage to organs following a single exposure if swallowed.

**Over-exposure signs/symptoms**

**Eye contact**
Adverse symptoms may include the following:
- Pain or irritation
- Watering
- Redness

**Inhalation**
No specific data.

**Skin contact**
No specific data.

**Ingestion**
No specific data.

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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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.
### Section 5. Fire-fighting measures

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

**Specific hazards arising from the chemical**: Highly flammable liquid and vapor. 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
- Halogenated compounds
- Formaldehyde.

#### 5.3 Advice for firefighters

**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. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Absorb spillage to prevent material damage. 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). 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. Take precautionary measures against electrostatic discharges. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.

---

**Date of issue**: 11/19/2021
Acid Alcohol 1 percent

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.

7.2 Conditions for safe storage, including any incompatibilities: Specific storage conditions: Please consult the label. 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 in a corrosion resistant container with a resistant inner liner. Store locked up. Eliminate all ignition sources. Separate from alkalis. Separate from oxidizing materials. Keep away from metals. 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 available.

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>
</table>
| Ethanol         | ACGIH TLV (United States, 1/2021).  
|                 | STEL: 1000 ppm 15 minutes.  
|                 | TWA: 1000 ppm 8 hours.  
|                 | TWA: 1900 mg/m³ 8 hours.  
|                 | NIOSH REL (United States, 10/2020).  
|                 | TWA: 1000 ppm 10 hours.  
|                 | TWA: 1900 mg/m³ 10 hours.  
|                 | OSHA PEL (United States, 5/2018).  
|                 | TWA: 1000 ppm 8 hours.  
|                 | TWA: 1900 mg/m³ 8 hours.  
| Propan-2-ol     | ACGIH TLV (United States, 1/2021).  
|                 | TWA: 200 ppm 8 hours.  
|                 | STEL: 400 ppm 15 minutes.  
|                 | TWA: 400 ppm 8 hours.  
|                 | TWA: 980 mg/m³ 8 hours.  
|                 | STEL: 500 ppm 15 minutes.  
|                 | STEL: 1225 mg/m³ 15 minutes.  
| Methanol        | NIOSH REL (United States, 10/2020).  
|                 | TWA: 400 ppm 10 hours.  
|                 | TWA: 980 mg/m³ 10 hours.  
|                 | STEL: 500 ppm 15 minutes.  
|                 | STEL: 1225 mg/m³ 15 minutes.  
|                 | OSHA PEL (United States, 5/2018).  
|                 | TWA: 400 ppm 8 hours.  
|                 | TWA: 980 mg/m³ 8 hours.  
|                 | ACGIH TLV (United States, 1/2021).  

Date of issue: 11/19/2021
Section 8. Exposure controls/personal protection

Hydrochloric acid

<table>
<thead>
<tr>
<th>Absorbed through skin.</th>
<th>TWA: 200 ppm 8 hours.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorbed through skin.</td>
<td>TWA: 260 mg/m³ 8 hours.</td>
</tr>
<tr>
<td>Absorbed through skin.</td>
<td>STEL: 250 ppm 15 minutes.</td>
</tr>
<tr>
<td>Absorbed through skin.</td>
<td>STEL: 325 mg/m³ 15 minutes.</td>
</tr>
</tbody>
</table>


NIOSH REL (United States, 10/2020).

OSHA PEL (United States, 5/2018).

ACGIH TLV (United States, 1/2021).

Hydrochloric acid

8.2 Exposure controls

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.
Section 8. Exposure controls/personal 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and 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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

**Appearance**

- Physical state: Liquid. [Clear.]
- Color: Colorless.
- Odor: Alcohol-like. [Slight]
- Odor threshold: Not available.
- pH: 1.19 to 1.39
- Melting point/freezing point: Not available.
- Boiling point, initial boiling point, and boiling range: Not available.
- Flash point: Closed cup: 16.6°C (61.9°F)
- Evaporation rate: Not available.
- Flammability: Not applicable.
- Lower and upper explosion limit/flammability limit: Lower: 3.3%
  Upper: 19%

**Vapor pressure**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Vapor Pressure at 20°C</th>
<th>Vapor pressure at 50°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm Hg</td>
<td>kPa</td>
</tr>
<tr>
<td>Methanol</td>
<td>126.96</td>
<td>16.9</td>
</tr>
<tr>
<td>Ethanol</td>
<td>42.95</td>
<td>5.7</td>
</tr>
</tbody>
</table>

- Relative vapor density: Not available.
- Relative density: Not available.
- Solubility: Soluble in the following materials: cold water and hot water.
- Miscible with water: Yes.
- Partition coefficient: n-octanol/water: Not applicable.
- Auto-ignition temperature: 

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7/15
Section 9. Physical and chemical properties and safety characteristics

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>°C</th>
<th>°F</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>455</td>
<td>851</td>
<td>DIN 51794</td>
</tr>
<tr>
<td>Methanol</td>
<td>455</td>
<td>851</td>
<td>DIN 51794</td>
</tr>
</tbody>
</table>

Decomposition temperature: Not available.
Viscosity: Not available.
Particle characteristics
Median particle size: Not applicable.

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
Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials:
alkalis
oxidizing materials
metals

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></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>12800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>189.95 mg/l</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>145000 ppm</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>83.84 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>64000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>15800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Methanol</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>189.95 mg/l</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>145000 ppm</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>83.84 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>64000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>15800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</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 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>0.066666667 minutes 100 mg</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 uL 24 hours 100 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 mg 500 mg</td>
<td>-</td>
</tr>
<tr>
<td>Methanol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>40 mg 24 hours 20 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>20 mg 24 hours 20 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

**Skin**
Repeated exposure may cause skin dryness or cracking.

**Sensitization**
Not available.

**Mutagenicity**
Not available.

**Carcinogenicity**
Not available.

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**
Not available.

**Teratogenicity**
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>Propan-2-ol</td>
<td>Category 3</td>
<td>-</td>
<td>Narcotic effects central nervous system (CNS), optic nerve</td>
</tr>
<tr>
<td>Methanol</td>
<td>Category 1</td>
<td>-</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>Category 3</td>
<td>-</td>
<td></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

Eye contact : Causes serious eye irritation.
Inhalation : May cause damage to organs following a single exposure if inhaled.
Skin contact : May cause damage to organs following a single exposure in contact with skin.
Ingestion : May cause damage to organs following a single exposure if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
- pain or irritation
- watering
- redness
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

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
General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Reproductive toxicity : No known significant effects or critical hazards.

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>Acid Alcohol 1 percent</td>
<td>3088.3</td>
<td>9677.4</td>
<td>N/A</td>
<td>50.1</td>
<td>N/A</td>
</tr>
<tr>
<td>Ethanol</td>
<td>7000</td>
<td>N/A</td>
<td>124.7</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>5000</td>
<td>12800</td>
<td>N/A</td>
<td>72.2</td>
<td>N/A</td>
</tr>
<tr>
<td>Methanol</td>
<td>100</td>
<td>300</td>
<td>N/A</td>
<td>3</td>
<td>N/A</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>N/A</td>
<td>N/A</td>
<td>1.038</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Other information : Adverse symptoms may include the following: blurred or double vision, Eye contact can result in corneal damage or blindness. Repeated or prolonged exposure to the substance can produce liver damage. Narcotic effect. May cause nervous system disturbances.

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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 3306 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 1074 mg/l Fresh water</td>
<td>Crustaceans - Cypris subglobosa</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 5680 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 11000000 µg/l Marine water</td>
<td>Fish - Alburnus alburnus</td>
<td>96 hours</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>Propan-2-ol</td>
<td>Acute EC50 7550 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1400000 µg/l Marine water</td>
<td>Crustaceans - Crangon crangon</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4200 mg/l Fresh water</td>
<td>Fish - Rasbora heteromorpha</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2736 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></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>Methanol</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>
<tr>
<td></td>
<td>Acute LC50 2400000 µg/l Marine water</td>
<td>Crustaceans - Carcinus maenas - Adult</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 282 ppm Fresh water</td>
<td>Fish - Gambusia affinis - Adult</td>
<td>96 hours</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td></td>
<td></td>
<td></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>
<tr>
<td>Propan-2-ol</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Methanol</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>Propan-2-ol</td>
<td>0.05</td>
<td>-</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.
**Section 13. Disposal considerations**

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.

**United States - RCRA Toxic hazardous waste "U" List**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>Status</th>
<th>Reference number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol (I); Methyl alcohol (I)</td>
<td>67-56-1</td>
<td>Listed</td>
<td>U154</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th></th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN2924</td>
<td>UN2924</td>
<td>UN2924</td>
<td>UN2924</td>
<td>UN2924</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Flammable liquids, corrosive, n.o.s. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)</td>
<td>FLAMMABLE LIQUID, CORROSIVE, N. O.S. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)</td>
<td>LIQUIDO INFLAMABLE, CORROSIVO, N. E.P. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)</td>
<td>FLAMMABLE LIQUID, CORROSIVE, N.O. S. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)</td>
<td>Flammable liquid, corrosive, n.o.s. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>3 (8)</td>
<td>3 (8)</td>
<td>3 (8)</td>
<td>3 (8)</td>
<td>3 (8)</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
</tbody>
</table>

**Additional information**

If shipped as part of a kit "UN3316 (Chemical kit), Class 9, PG II" can be used. Precondition: UN3316 must be allowed for the remaining vials in same kit too.

**DOT Classification**

: **Limited quantity** Yes.


: **Quantity limitation** Passenger aircraft/rail: 1 L. Cargo aircraft: 5 L.

: **Special provisions** IB2, T11, TP2, TP27

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Section 14. Transport information

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.40-2.42 (Class 8).
  Explosive Limit and Limited Quantity Index 1
  Passenger Carrying Road or Rail Index 1
  Special provisions 16

Mexico Classification : Special provisions 274
IMDG : Emergency schedules F-E, S-C
  Special provisions 274
  Special provisions A3, A803

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.

Section 15. Regulatory information

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

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
  Clean Water Act (CWA) 311: Hydrochloric acid
  Clean Air Act (CAA) 112 regulated toxic substances: Hydrochloric acid

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

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>EHS</th>
<th>SARA 302 TPQ</th>
<th>SARA 304 RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>≤2.5</td>
<td>Yes.</td>
<td>500 (lbs)</td>
<td>5000 (gallons)</td>
</tr>
</tbody>
</table>

SARA 304 RQ : 500000 lbs / 227000 kg

SARA 311/312
Classification : FLAMMABLE LIQUIDS - Category 2
  CORROSIVE TO METALS - Category 1
  EYE IRRITATION - Category 2A
  SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2

Composition/information on ingredients

Date of issue : 11/19/2021
Section 15. Regulatory information

### Name | % | Classification
--- | --- | ---
Ethanol | ≥50 - ≤75 | FLAMMABLE LIQUIDS - Category 2
Propan-2-ol | ≤10 | FLAMMABLE LIQUIDS - Category 2
Methanol | ≤4.7 | FLAMMABLE LIQUIDS - Category 2
Hydrochloric acid | ≤2.5 | FLAMMABLE LIQUIDS - Category 2

<table>
<thead>
<tr>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td>Form R - Reporting requirements</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Supplier notification</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations
- **Massachusetts**: The following components are listed: ETHYL ALCOHOL; ETHANOL; DENATURED ALCOHOL; ISOPROPYL ALCOHOL; 2-PROPA NOL; METHANOL; METHYL ALCOHOL; HYDROGEN CHLORIDE; HYDROCHLORIC ACID
- **New York**: The following components are listed: Methanol; Hydrochloric acid
- **New Jersey**: The following components are listed: ETHYL ALCOHOL; METHYL CARBINO L; ETHANOL; ALCOHOL; ISOPROPYL ALCOHOL; 2-PROPA NOL; ISOPROPANOL; METHYL ALCOHOL; WOOD ALCOHOL; METHANOL; HYDROGEN CHLORIDE; MURIATIC ACID; HYDROCHLORIC ACID
- **Pennsylvania**: The following components are listed: ETHANOL; DENATURED ALCOHOL; 2-PROPA NOL; METHANOL; HYDROCHLORIC ACID

### 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.

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Section 15. Regulatory information

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

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>Canada</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>China</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>Europe</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>Japan</td>
<td>Japan inventory (CSCL): All components are listed or exempted. Japan inventory (ISHL): All components are listed or exempted.</td>
</tr>
<tr>
<td>New Zealand</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>Philippines</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>Taiwan</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>Thailand</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>Turkey</td>
<td>All components listed or exempted.</td>
</tr>
<tr>
<td>United States</td>
<td>All components active or exempted.</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>All components listed or exempted.</td>
</tr>
</tbody>
</table>

Section 16. Other information

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABLE LIQUIDS - Category 2</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>CORROSIVE TO METALS - Category 1</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>EYE IRRITATION - Category 2A</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

History

| Date of issue          | 11/19/2021 |
| Date of previous issue | 05/31/2020 |
| Version                | 5          |

Key to abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration Factor</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System of Classification and Labelling of Chemicals</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IBC</td>
<td>Intermediate Bulk Container</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods</td>
</tr>
<tr>
<td>LogPow</td>
<td>Logarithm of the octanol/water partition coefficient</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution From Ships, 1973</td>
</tr>
<tr>
<td></td>
<td>as modified by the Protocol of 1978. (&quot;Marpol&quot; = marine pollution)</td>
</tr>
<tr>
<td>N/A</td>
<td>Not available</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
</tbody>
</table>

ılması signifi ca image that has changed from previously issued version.

Notice to reader

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