Section 1. Identification

Product identifier : APCI-L Low Concentration Tuning Mix, Part Number G1969-85010
Part no. : G1969-85010

Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Reagents and Standards for Analytical Chemistry Laboratory Use
100 ml Container

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard identification

Classification of the substance or mixture

H225 FLAMMABLE LIQUIDS - Category 2
H302 ACUTE TOXICITY (oral) - Category 4
H311 ACUTE TOXICITY (dermal) - Category 3
H331 ACUTE TOXICITY (inhalation) - Category 3
H319 EYE IRRITATION - Category 2A
H351 CARCINOGENICITY - Category 2
H361 TOXIC TO REPRODUCTION - Category 2
H370 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1
H372 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
H225 - Highly flammable liquid and vapor.
H302 - Harmful if swallowed.
H311 + H331 - Toxic in contact with skin or if inhaled.
H319 - Causes serious eye irritation.
H351 - Suspected of causing cancer.
H361 - Suspected of damaging fertility or the unborn child.
H370 - Causes damage to organs. (central nervous system (CNS), optic nerve)
H372 - Causes damage to organs through prolonged or repeated exposure. (blood system, central nervous system (CNS), kidneys, liver)

Precautionary statements
Section 2. Hazard identification

Prevention:
- P201 - Obtain special instructions before use.
- P280 - Wear protective gloves, protective clothing and eye or face protection.
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P260 - Do not breathe vapor.
- P270 - Do not eat, drink or smoke when using this product.
- P264 - Wash thoroughly after handling.

Response:
- P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor.
- P304 + P340, P311 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor.
- P361 + P364 - Take off immediately all contaminated clothing and wash it before reuse.
- P302 + P312, P352 - IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water.
- 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:
- Not applicable.

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

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Synonyms</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>Acetonitrile</td>
<td>≥80</td>
<td>75-05-8</td>
</tr>
<tr>
<td>Methanol</td>
<td>Methanol</td>
<td>≥10 - ≤30</td>
<td>67-56-1</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>Chloroform</td>
<td>≥1 - ≤5</td>
<td>67-66-3</td>
</tr>
</tbody>
</table>

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

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

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.

Inhalation:
- 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. Get medical attention. 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. 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.
Section 4. First-aid measures

**Skin contact**  
Wash with plenty of soap and 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. Get medical attention. 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. 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.

**Wash with plenty of soap and water. Remove contaminated clothing and shoes.**

**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.

**Potential acute health effects**

**Eye contact**  
Causes serious eye irritation.

**Inhalation**  
Toxic if inhaled. Causes damage to organs following a single exposure if inhaled.

**Skin contact**  
Toxic in contact with skin. Causes damage to organs following a single exposure in contact with skin.

**Ingestion**  
Harmful if swallowed. Causes 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**  
Adverse symptoms may include the following:
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

**Skin contact**  
Adverse symptoms may include the following:
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

**Ingestion**  
Adverse symptoms may include the following:
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

**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.

**Most important symptoms/effects, acute and delayed**

**Inhalation**  
Toxic if inhaled. Causes damage to organs following a single exposure if inhaled.

**Ingestion**  
Harmful if swallowed. Causes damage to organs following a single exposure if swallowed.

**Skin contact**  
Toxic in contact with skin. Causes damage to organs following a single exposure in contact with skin.

**Eye contact**  
Causes serious eye irritation.

**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.

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

**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**

: 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
  - nitrogen oxides
  - halogenated compounds
  - carbonyl halides
  - cyanides
  - Formaldehyde.

**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.

**Remark**

: Keep away from heat, sparks and flame.

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**

**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

**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 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. 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.

**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**

| Ingredient name     | CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 34 mg/m³ 8 hours. 8 hrs OEL: 20 ppm 8 hours.  
| CA British Columbia Provincial (Canada, 6/2021). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Ontario Provincial (Canada, 6/2019). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Quebec Provincial (Canada, 6/2021). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 30 ppm 15 minutes. TWA: 20 ppm 8 hours.  
| CA Alberta Provincial (Canada, 6/2018). Absorbed through skin. 8 hrs OEL: 262 mg/m³ 8 hours. 8 hrs OEL: 200 ppm 8 hours. 15 min OEL: 250 ppm 15 minutes. 15 min OEL: 328 mg/m³ 15 minutes.  |

| Ingredient name     | 8 hrs OEL: 34 mg/m³ 8 hours. 8 hrs OEL: 20 ppm 8 hours.  
| CA British Columbia Provincial (Canada, 6/2021). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Ontario Provincial (Canada, 6/2019). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Quebec Provincial (Canada, 6/2021). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 30 ppm 15 minutes. TWA: 20 ppm 8 hours.  
| CA Alberta Provincial (Canada, 6/2018). Absorbed through skin. 8 hrs OEL: 262 mg/m³ 8 hours. 8 hrs OEL: 200 ppm 8 hours. 15 min OEL: 250 ppm 15 minutes. 15 min OEL: 328 mg/m³ 15 minutes.  |

| Ingredient name     | 8 hrs OEL: 34 mg/m³ 8 hours. 8 hrs OEL: 20 ppm 8 hours.  
| CA British Columbia Provincial (Canada, 6/2021). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Ontario Provincial (Canada, 6/2019). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Quebec Provincial (Canada, 6/2021). Absorbed through skin. TWA: 20 ppm 8 hours.  
| CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 30 ppm 15 minutes. TWA: 20 ppm 8 hours.  
| CA Alberta Provincial (Canada, 6/2018). Absorbed through skin. 8 hrs OEL: 262 mg/m³ 8 hours. 8 hrs OEL: 200 ppm 8 hours. 15 min OEL: 250 ppm 15 minutes. 15 min OEL: 328 mg/m³ 15 minutes.  |

### Date of issue/Date of revision: 10/10/2022  
**Date of previous issue**: 03/07/2022  
**Version**: 10.1  
5/14
## Section 8. Exposure controls/personal protection

| Trichloromethane | CA British Columbia Provincial (Canada, 6/2021). Absorbed through skin.  
| | TWA: 200 ppm 8 hours.  
| | STEL: 250 ppm 15 minutes.  
| | CA Ontario Provincial (Canada, 6/2019). Absorbed through skin.  
| | TWA: 200 ppm 8 hours.  
| | STEL: 250 ppm 15 minutes.  
| | CA Quebec Provincial (Canada, 6/2021). Absorbed through skin.  
| | TWAEV: 200 ppm 8 hours.  
| | TWAEV: 262 mg/m³ 8 hours.  
| | STEV: 250 ppm 15 minutes.  
| | STEV: 328 mg/m³ 15 minutes.  
| | CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin.  
| | STEL: 250 ppm 15 minutes.  
| | TWA: 200 ppm 8 hours.  
| | CA Alberta Provincial (Canada, 6/2018).  
| | 8 hrs OEL: 49 mg/m³ 8 hours.  
| | 8 hrs OEL: 10 ppm 8 hours.  
| | CA British Columbia Provincial (Canada, 6/2021).  
| | TWA: 2 ppm 8 hours.  
| | CA Ontario Provincial (Canada, 6/2019).  
| | TWA: 10 ppm 8 hours.  
| | CA Quebec Provincial (Canada, 6/2021).  
| | TWAEV: 5 ppm 8 hours.  
| | TWAEV: 24.4 mg/m³ 8 hours. |

### Biological exposure indices

None known.

### 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.

### Skin protection
Section 8. Exposure controls/personal protection

**Hand protection**: When used as intended with Agilent instruments, use of the product is not expected to result in direct contact with the chemical. However, in case of accidental contact with splash wear good quality:
- Glove material: butyl rubber
- Glove thickness: $\geq 0.2$ mm
- Breakthrough time: $>30$ minutes

While not recommended, if typical disposable laboratory nitrile gloves are used, they need to be removed immediately if contacted with the mixture. When contacted with acetonitrile, typical laboratory nitrile gloves have very short breakthrough times, considerably less than 10 minutes.

**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**: When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures, and, therefore, respiratory protection isn’t needed. In emergency situations, when a respirator is needed, use a full-face supplied air respirator and components tested and approved under appropriate government standards such as CEN (EU) or NIOSH (US).

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**

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling point, initial boiling point, and boiling range</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Closed cup: 2°C (35.6°F)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Lower and upper explosion limit/flammability limit</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**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>Trichloromethane</td>
<td>159.01</td>
<td>21.2</td>
</tr>
<tr>
<td>Methanol</td>
<td>126.96</td>
<td>16.9</td>
</tr>
</tbody>
</table>

| Relative vapor density | Not available. |
| Relative density      | Not available. |
Section 9. Physical and chemical properties and safety characteristics

<table>
<thead>
<tr>
<th>Solubility(ies)</th>
<th>Media</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td></td>
<td>Soluble</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Miscible with water</th>
<th>Yes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Auto-ignition temperature</th>
<th>Ingredient name</th>
<th>°C</th>
<th>°F</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Methanol</td>
<td>455</td>
<td>851</td>
<td>DIN 51794</td>
</tr>
<tr>
<td></td>
<td>Acetonitrile</td>
<td>524</td>
<td>975.2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decomposition temperature</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Particle characteristics</td>
<td></td>
</tr>
<tr>
<td>Median particle size</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>No specific test data related to reactivity available for this product or its ingredients.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>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.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Reactive or incompatible with the following materials: oxidizing materials. Reactive or incompatible with the following materials: metals and acids.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
</tbody>
</table>

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>Acetonitrile</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>17100 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2460 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>
<tr>
<td>Trichloromethane</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;20 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>300 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**
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>Acetonitrile</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 uL</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 mg</td>
<td>-</td>
</tr>
<tr>
<td>Methanol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>40 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 mg</td>
<td>-</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

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

**Sensitization**
- Not available.

**Mutagenicity**
- Conclusion/Summary: Not available.

**Carcinogenicity**
- Conclusion/Summary: Not available.

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>-</td>
<td>2B</td>
<td>A4</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>2B</td>
<td>-</td>
<td>A3</td>
</tr>
</tbody>
</table>

**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>Methanol</td>
<td>Category 1</td>
<td>-</td>
<td>central nervous system (CNS), optic nerve</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>Category 3</td>
<td>-</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td></td>
<td>Category 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>Category 2</td>
<td>-</td>
<td>blood system, central nervous system (CNS), kidneys, liver</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>Category 1</td>
<td>inhalation</td>
<td>kidneys, liver</td>
</tr>
</tbody>
</table>

**Aspiration hazard**

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Not available.

Information on the likely routes of exposure:

Potential acute health effects:

Eye contact: Causes serious eye irritation.
Inhalation: Toxic if inhaled. Causes damage to organs following a single exposure if inhaled.
Skin contact: Toxic in contact with skin. Causes damage to organs following a single exposure in contact with skin.
Ingestion: Harmful if swallowed. Causes 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: Adverse symptoms may include the following:
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

Skin contact: Adverse symptoms may include the following:
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

Ingestion: Adverse symptoms may include the following:
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

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: Causes damage to organs through prolonged or repeated exposure.
Carcinogenicity: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity: No known significant effects or critical hazards.
Reproductive toxicity: Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity:

Acute toxicity estimates:

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### Section 11. Toxicological information

<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>APCI-L Low Concentration Tuning Mix, Part Number G1969-85010</td>
<td>320.5</td>
<td>806.9</td>
<td>N/A</td>
<td>8.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Acetonitrile</td>
<td>500</td>
<td>1100</td>
<td>N/A</td>
<td>3</td>
<td>N/A</td>
</tr>
<tr>
<td>Methanol</td>
<td>100</td>
<td>300</td>
<td>N/A</td>
<td>7.348</td>
<td>N/A</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>500</td>
<td>N/A</td>
<td>N/A</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. May cause headache, weakness, dizziness, shortness of breath, cyanosis, rapid heart beat, unconsciousness and possible death.

### 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>Acetonitrile</td>
<td>Acute LC50 3600000 µg/l Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1000000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1000000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1600000 µg/l Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td>Methanol</td>
<td>Acute EC50 2736 mg/l Marine water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</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>Chronic NOEC 298000 µg/l Marine water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>96 hours</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>Acute LC50 3289 mg/l Fresh water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 290 mg/l Fresh water</td>
<td>Crustaceans - Cypris subglobosa</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 9.96 mg/l Marine water</td>
<td>Algae - Chlamydomonas reinhardtii - Exponential growth phase</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 13.3 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 1.8 mg/l Fresh water</td>
<td>Fish - Danio rerio - Egg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2.803 mg/l Fresh water</td>
<td>Algae - Ulva pertusa</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 290000 µg/l Fresh water</td>
<td>Algae - Chlamydomonas reinhardtii - Exponential growth phase</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 13.3 ppm Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic EC10 3.61 mg/l Fresh water</td>
<td>Fish - Lepomis macrochirus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1.8 mg/l Fresh water</td>
<td>Algae - Chlamydomonas reinhardtii - Exponential growth phase</td>
<td></td>
</tr>
</tbody>
</table>

#### Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>OECD 310 Ready Biodegradability - CO₂ in Sealed Vessels (Headspace Test)</td>
<td>70 % - Readily - 21 days</td>
<td>-</td>
<td>Activated sludge</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Methanol</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>-0.34</td>
<td>3</td>
<td>low</td>
</tr>
<tr>
<td>Methanol</td>
<td>-0.77</td>
<td>&lt;10</td>
<td>low</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>1.97</td>
<td>690</td>
<td>high</td>
</tr>
</tbody>
</table>

**Mobility in soil**

- **Soil/water partition coefficient (K_{oc})**: 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>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1993</td>
<td>FLAMMABLE LIQUID, N.O.S. (Acetonitrile, Methanol)</td>
<td>FLAMMABLE LIQUID, N.O.S. (Acetonitrile, Methanol)</td>
<td>Flammable liquid, n.o.s. (Acetonitrile, Methanol)</td>
</tr>
</tbody>
</table>

**Transport hazard class(es)**: 3

**Packing group**: II

**Environmental hazards**: No.

**Proof of classification statement**: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).

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**Additional information**

**TDG Classification**
- Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).
  - **Explosive Limit and Limited Quantity Index** 1
  - **Passenger Carrying Road or Rail Index** 5
  - **Special provisions** 16, 150

**IMDG**
- **Emergency schedules** F-E, _S-E_
- **Special provisions** 274

**IATA**
- **Quantity limitation** Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353.
  - Cargo Aircraft Only: 60 L. Packaging instructions: 364.
  - **Special provisions** A3

**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 IMO instruments**
- Not available.

Section 15. Regulatory information

**Canadian lists**
- **Canadian NPRI**
  - The following components are listed: acetonitrile; methanol; chloroform
- **CEPA Toxic substances**
  - The following components are listed: chlorinated alkanes

**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**
- Not determined.

**China**
- Not determined.

**Eurasian Economic Union**
- **Russian Federation inventory**: All components are listed or exempted.

**Japan**
- **Japan inventory (CSCL)**: Not determined.
  - **Japan inventory (ISHL)**: Not determined.

**New Zealand**
- Not determined.

**Philippines**
- Not determined.

**Republic of Korea**
- Not determined.

**Taiwan**
- Not determined.

**Thailand**
- Not determined.

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## Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Country</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>Not determined.</td>
</tr>
<tr>
<td>United States</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

## Section 16. Other information

### History
- **Date of issue/Date of revision**: 10/10/2022
- **Date of previous issue**: 03/07/2022
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### Key to abbreviations
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- HPR = Hazardous Products Regulations
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- 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 2</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>ACUTE TOXICITY (oral) - Category 4</td>
<td>Calculation method</td>
</tr>
<tr>
<td>ACUTE TOXICITY (dermal) - Category 3</td>
<td>Calculation method</td>
</tr>
<tr>
<td>ACUTE TOXICITY (inhalation) - Category 3</td>
<td>Calculation method</td>
</tr>
<tr>
<td>EYE IRRITATION - Category 2A</td>
<td>Calculation method</td>
</tr>
<tr>
<td>CARCINOGENICITY - Category 2</td>
<td>Calculation method</td>
</tr>
<tr>
<td>TOXIC TO REPRODUCTION - Category 2</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

*Indicates information that has changed from previously issued version.*

### Notice to reader

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