Section 1. Identification

1.1 Product identifier
Product name: APCI-L Low Concentration Tuning Mix, Part Number G1969-8501
Part no.: G1969-85010
Validation date: 3/7/2022

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

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
800-227-9770

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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>FLAMMABLE LIQUIDS - Category 2</td>
</tr>
<tr>
<td>H302</td>
<td>ACUTE TOXICITY (oral) - Category 4</td>
</tr>
<tr>
<td>H311</td>
<td>ACUTE TOXICITY (dermal) - Category 3</td>
</tr>
<tr>
<td>H331</td>
<td>ACUTE TOXICITY (inhalation) - Category 3</td>
</tr>
<tr>
<td>H319</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td>H351</td>
<td>CARCINOGENICITY - Category 2</td>
</tr>
<tr>
<td>H361</td>
<td>TOXIC TO REPRODUCTION - Category 2</td>
</tr>
<tr>
<td>H370</td>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1</td>
</tr>
<tr>
<td>H372</td>
<td>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1</td>
</tr>
</tbody>
</table>

2.2 GHS label elements
Hazard pictograms: ![Flammable](#) ![Inhalation Risk](#) ![Skin Irritation](#) ![Danger](#)

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)
Section 2. Hazards identification

Precautionary statements

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.
P241 - Use explosion-proof electrical, ventilating or lighting equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P233 - Keep container tightly closed.
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: 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:
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.

2.3 Other hazards

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>Acetonitrile</td>
<td>≥75 - ≤90</td>
<td>75-05-8</td>
</tr>
<tr>
<td>Methanol</td>
<td>≤14</td>
<td>67-56-1</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>≤1</td>
<td>67-66-3</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.

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
Section 4. First aid measures

4.2 Most important symptoms/effects, acute and delayed

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.

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

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

Specific treatments: No specific treatment.

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

See toxicological information (Section 11)
Section 5. Fire-fighting measures

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: 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.

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.
- Remark: Keep away from heat, sparks and flame.

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. 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".

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.

Date of issue: 03/07/2022
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 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.

7.2 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.

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>
<tbody>
<tr>
<td>Acetonitrile</td>
<td>ACGIH TLV (United States, 1/2021). Absorbed through skin. TWA: 20 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 40 ppm 8 hours. TWA: 70 mg/m³ 8 hours. STEL: 60 ppm 15 minutes. STEL: 105 mg/m³ 15 minutes. NIOSH REL (United States, 10/2020). TWA: 20 ppm 10 hours. TWA: 34 mg/m³ 10 hours. OSHA PEL (United States, 5/2018). TWA: 40 ppm 8 hours. TWA: 70 mg/m³ 8 hours. ACGIH TLV (United States, 1/2021). Absorbed through skin. TWA: 200 ppm 8 hours.</td>
</tr>
<tr>
<td>Methanol</td>
<td></td>
</tr>
</tbody>
</table>

Date of issue: 03/07/2022
Section 8. Exposure controls/personal protection

Trichloromethane

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.

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: ≥ 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, 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: ≥ 0.2 mm
- Breakthrough time: >30 minutes

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
- Physical state: Liquid.
- Color: Not available.
- Odor: Not available.
- Odor threshold: Not available.
- pH: Not available.
- Melting point/freezing point: Not available.
- Boiling point, initial boiling point, and boiling range: Not available.
- Flash point: Closed cup: 2°C (35.6°F)
- Evaporation rate: Not available.
- Flammability: Not applicable.
- Lower and upper explosion limit/flammability limit: Not available.
- 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.
Solubility: Easily soluble in the following materials: cold water and hot water.
Section 9. Physical and chemical properties and safety characteristics

- **Miscible with water**: Yes.
- **Partition coefficient: n-octanol/water**: Not applicable.
- **Auto-ignition temperature**: Not applicable.
- **Decomposition temperature**: Not available.
- **Viscosity**: Not available.
- **Particle characteristics**: Median particle size: Not applicable.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>°C</th>
<th>°F</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>455</td>
<td>851</td>
<td>DIN 51794</td>
</tr>
<tr>
<td>Acetonitrile</td>
<td>524</td>
<td>975.2</td>
<td></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. Reactive or incompatible with the following materials: metals and acids.
- **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>Acetonitrile</td>
<td>LC50</td>
<td>Rat</td>
<td>17100 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rat</td>
<td>2460 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Methanol</td>
<td>LC50</td>
<td>Rat</td>
<td>189.95 mg/l</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rat</td>
<td>145000 ppm</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LC50</td>
<td>Rat</td>
<td>83.84 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rat</td>
<td>64000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>LD50</td>
<td>Rabbit</td>
<td>15800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rat</td>
<td>5600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50</td>
<td>Rabbit</td>
<td>&gt;20 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rat</td>
<td>300 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>Acetonitrile</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td></td>
<td>24 hours 100 uL</td>
<td>-</td>
</tr>
<tr>
<td>Methanol</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></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>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloromethane</td>
<td>-</td>
<td>2B</td>
<td>Reasonably anticipated to be a human carcinogen.</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>
</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>blood system, central nervous system (CNS), kidneys, liver</td>
</tr>
</tbody>
</table>

**Aspiration hazard**
- Not available.
Section 11. Toxicological information

Information on the likely routes of exposure

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

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

Potential acute health effects

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.

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.

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Section 11. Toxicological information

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.

<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 G1969-8501</td>
<td>320.5</td>
<td>806.9</td>
<td>N/A</td>
<td>8</td>
<td>N/A</td>
</tr>
<tr>
<td>Acetonitrile</td>
<td>500</td>
<td>1100</td>
<td>N/A</td>
<td>11</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>Trichloromethane</td>
<td>500</td>
<td>N/A</td>
<td>N/A</td>
<td>7.348</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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>Acetonitrile</td>
<td>Acute IC50 3685000 µg/l Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 3600000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1000000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1000000 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>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 3289 mg/l Fresh water</td>
<td>Crustaceans - Crangon crangon -</td>
<td>48 hours</td>
</tr>
<tr>
<td>Trichloromethane</td>
<td>Acute LC50 290 mg/l Fresh water</td>
<td>Adult</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 9.96 mg/l Marine water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 13.3 mg/l Fresh water</td>
<td>Fish - Danio rerio - Egg</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 529000 µg/l Fresh water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1.8 mg/l Fresh water</td>
<td>Algae - Chlamydomonas reinhardtii - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2.803 mg/l Fresh water</td>
<td>Crustaceans - Cypris subglobosa</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

12.2 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>
Section 12. Ecological information

<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>

12.3 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>

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}): 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. 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>Acetonitrile (I,T)</td>
<td>75-05-8</td>
<td>Listed</td>
<td>U003</td>
</tr>
<tr>
<td>Methanol (I); Methyl alcohol (I)</td>
<td>67-56-1</td>
<td>Listed</td>
<td>U154</td>
</tr>
<tr>
<td>Chloroform; Methane, trichloro-</td>
<td>67-66-3</td>
<td>Listed</td>
<td>U044</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/PERSOAL PROTECTION for additional handling information and protection of employees.

Date of issue: 03/07/2022
## Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN number</strong></td>
<td><strong>UN1993</strong></td>
<td><strong>UN1993</strong></td>
<td><strong>UN1993</strong></td>
<td><strong>UN1993</strong></td>
</tr>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>Flammable liquids, n.o.s. (Acetonitrile, Methanol)</td>
<td>FLAMMABLE LIQUID, N.O.S. (Acetonitrile, Methanol)</td>
<td>LIQUIDO INFLAMABLE, N. E.P. (Acetonitrile, Methanol)</td>
<td>FLAMMABLE LIQUID, N.O.S. (Acetonitrile, Methanol)</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Packaging group</strong></td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
</tr>
<tr>
<td><strong>Environmental hazards</strong></td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

### Additional information

**DOT Classification**
- Reportable quantity: 1000 lbs / 454 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- Limited quantity: Yes.
- Quantity limitation: Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.
- Special provisions: IB2, T7, TP1, TP8, TP28

**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

**Mexico Classification**
- Special provisions: 274

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

**IATA**
- 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.

Date of issue: 03/07/2022
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) PAIR: Acetonitrile
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: Acetonitrile; Trichloromethane
Clean Water Act (CWA) 311: Trichloromethane

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 (lbs)</th>
<th>SARA 304 RQ (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloromethane</td>
<td>≤1</td>
<td>Yes</td>
<td>10000</td>
<td>803.8</td>
</tr>
</tbody>
</table>

SARA 304 RQ: 1000 lbs / 454 kg

SARA 311/312

Classification: FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
</table>
| Acetonitrile  | ≥75 - ≤90 | FLAMMABLE LIQUIDS - Category 2
|               |        | ACUTE TOXICITY (oral) - Category 4
|               |        | ACUTE TOXICITY (dermal) - Category 4
|               |        | ACUTE TOXICITY (inhalation) - Category 4
|               |        | EYE IRRITATION - Category 2A
| Methanol      | ≤14    | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
| Trichloromethane | ≤1  | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1
|               |        | ACUTE TOXICITY (oral) - Category 4
|               |        | ACUTE TOXICITY (inhalation) - Category 3
|               |        | SKIN IRRITATION - Category 2
|               |        | EYE IRRITATION - Category 2A
|               |        | CARCINOGENICITY - Category 2
|               |        | TOXIC TO REPRODUCTION - Category 2
|               |        | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract... |

Date of issue: 03/07/2022
Section 15. Regulatory information

SARA 313

<table>
<thead>
<tr>
<th>Form R - Reporting requirements</th>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acetonitrile</td>
<td>75-05-8</td>
<td>≥75 - ≤90</td>
</tr>
<tr>
<td></td>
<td>Methanol</td>
<td>67-56-1</td>
<td>≤14</td>
</tr>
<tr>
<td></td>
<td>Trichloromethane</td>
<td>67-66-3</td>
<td>≤1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplier notification</th>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acetonitrile</td>
<td>75-05-8</td>
<td>≥75 - ≤90</td>
</tr>
<tr>
<td></td>
<td>Methanol</td>
<td>67-56-1</td>
<td>≤14</td>
</tr>
<tr>
<td></td>
<td>Trichloromethane</td>
<td>67-66-3</td>
<td>≤1</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: ACETONITRILE; METHANOL; METHYL ALCOHOL; CHLOROFORM; TRICHLOROMETHANE

New York: The following components are listed: Acetonitrile; Ethanenitrile; Methyl cyanide; Methanol; Chloroform; Methane, trichloro-

New Jersey: The following components are listed: ACETONITRILE; METHYL CYANIDE; CYANOMETHANE; METHYL ALCOHOL; WOOD ALCOHOL; METHANOL; CHLOROFORM; METHANE, TRICHLORO-

Pennsylvania: The following components are listed: ACETONITRILE; METHANOL; METHANE, TRICHLORO-

California Prop. 65

**WARNING:** This product can expose you to chemicals including Chloroform, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including 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>
<tr>
<td>Chloroform</td>
<td>Yes.</td>
<td>-</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.

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.

Date of issue: 03/07/2022
Section 15. Regulatory information

- China: Not determined.
- Europe: Not determined.
- 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.
- Turkey: Not determined.
- United States: Not determined.
- Viet Nam: Not determined.

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>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>

History

- Date of issue: 03/07/2022
- Date of previous issue: 06/21/2018
- Version: 10
- 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
  - N/A = Not available
  - UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

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