SAFETY DATA SHEET
Ink Cartridge for Agilent 339X Integrators, Part Number 5181-1220

Section 1. Identification

This product is considered an article. This Safety Data Sheet is written based on the encapsulated substance or mixture in this article.

1.1 Product identifier
Product name : Ink Cartridge for Agilent 339X Integrators, Part Number 5181-1220
Part no. : 5181-1220
Validation date : 10/27/2022

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Analytical chemistry.

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

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product’s directions for use it may present potential health and safety hazards.

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>H301</td>
<td>ACUTE TOXICITY (oral) - Category 3</td>
</tr>
<tr>
<td>H317</td>
<td>SKIN SENSITIZATION - Category 1</td>
</tr>
<tr>
<td>H360</td>
<td>TOXIC TO REPRODUCTION - Category 1B</td>
</tr>
<tr>
<td>H335</td>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</td>
</tr>
<tr>
<td>H373</td>
<td>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2</td>
</tr>
</tbody>
</table>

Ingredients of unknown toxicity : Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 1 - 10%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 12.4%

2.2 GHS label elements
Hazard pictograms : 

Signal word : Danger
Section 2. Hazards identification

Hazard statements:
H301 - Toxic if swallowed.
H317 - May cause an allergic skin reaction.
H335 - May cause respiratory irritation.
H360 - May damage fertility or the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure. (kidneys)

Precautionary statements

Prevention:
P201 - Obtain special instructions before use.
P260 - Do not breathe vapor.
P264 - Wash thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves, protective clothing and eye or face protection.

Response:
P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P363 - Wash contaminated clothing before reuse.
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
P302 + P352 - IF ON SKIN: Wash with plenty of water.

Storage:
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

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

Hazards not otherwise classified:
None known.

2.3 Other hazards

Section 3. Composition/information on ingredients

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product’s directions for use it may present potential health and safety hazards.

Substance/mixture: Mixture (encapsulated in article)

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pyrrolidone</td>
<td>≥25 - ≤50</td>
<td>616-45-5</td>
</tr>
<tr>
<td>Ethanediol</td>
<td>≥10 - ≤25</td>
<td>107-21-1</td>
</tr>
<tr>
<td>Alkyldiol</td>
<td>≤10</td>
<td>-</td>
</tr>
<tr>
<td>Food Black 2 acid salt #3</td>
<td>≤5</td>
<td>-</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 following exposure or if feeling unwell.

Date of issue: 10/27/2022
Section 4. First aid measures

**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.

**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. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**: Get medical attention immediately. Call a poison center or physician. 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. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### 4.2 Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact**: No known significant effects or critical hazards.

**Inhalation**: May cause respiratory irritation.

**Skin contact**: May cause an allergic skin reaction.

**Ingestion**: Toxic if swallowed.

#### Over-exposure signs/symptoms

**Eye contact**: No specific data.

**Inhalation**: Adverse symptoms may include the following:
- Respiratory tract irritation
- Coughing
- Reduced fetal weight
- Increase in fetal deaths
- Skeletal malformations

**Skin contact**: Adverse symptoms may include the following:
- Irritation
- Redness
- 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.

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Date of issue: 10/27/2022
Section 4. First aid measures

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 an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical: In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
- Carbon dioxide
- Carbon monoxide
- Nitrogen oxides

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.

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. 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. 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: 10/27/2022
Section 7. Handling and storage

7.1 Precautions for safe handling

**Protective measures**: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. 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. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. 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 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. 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

Since the hazardous ingredient in this article is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

### 8.1 Control parameters

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pyrrolidone</td>
<td>None. ACGIH TLV (United States, 1/2022). STEL: 10 mg/m³ 15 minutes. Form: Inhalable fraction. Aerosol only. STEL: 50 ppm 15 minutes. Form: Vapor fraction TWA: 25 ppm 8 hours. Form: Vapor fraction</td>
</tr>
<tr>
<td>Ethanediol</td>
<td>OSHA PEL 1989 (United States, 3/1989). CEIL: 50 ppm CEIL: 125 mg/m³</td>
</tr>
<tr>
<td>Alkyldiol</td>
<td>None. Food Black 2 acid salt #3</td>
</tr>
<tr>
<td>Food Black 2 acid salt #3</td>
<td>None.</td>
</tr>
</tbody>
</table>

**Biological exposure indices**

No exposure indices known.

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

Appropriate engineering controls: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

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

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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

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

Section 9. Physical and chemical properties 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: 7 to 7.4
Melting point/freezing point: Not available.
Boiling point, initial boiling point, and boiling range: Not available.
Flash point: Closed cup: >93.3°C (>199.9°F) [Pensky-Martens]
## Section 9. Physical and chemical properties and safety characteristics

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>Vapor pressure</td>
<td></td>
</tr>
<tr>
<td>Ingredient name</td>
<td>Vapor Pressure at 20°C</td>
</tr>
<tr>
<td></td>
<td>mm Hg</td>
</tr>
<tr>
<td>Water</td>
<td>23.8</td>
</tr>
<tr>
<td>Ethanediol</td>
<td>0.09</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Media</td>
</tr>
<tr>
<td>Miscible with water</td>
<td>Yes.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
</tr>
<tr>
<td>Ingredient name</td>
<td>°C</td>
</tr>
<tr>
<td>2-Pyrrolidone</td>
<td>395</td>
</tr>
<tr>
<td>Ethanediol</td>
<td>398</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Dynamic: &gt;2 mPa·s (&gt;2 cP)</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

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: No specific data.

10.5 Incompatible materials: May react or be incompatible with oxidizing materials. Reactive or incompatible with the following materials: alkalis.

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>2-Pyrrolidone</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>328 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Ethanediol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4700 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanediol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1 hours 100 mg</td>
<td>-</td>
</tr>
<tr>
<td></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>6 hours 1440 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>555 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization
Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanediol</td>
<td>Category 3</td>
<td>-</td>
<td>Respiratory tract irritation</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>Ethanediol</td>
<td>Category 2</td>
<td>oral</td>
<td>kidneys</td>
</tr>
</tbody>
</table>

Aspiration hazard
Not available.

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : May cause respiratory irritation.
Skin contact : May cause an allergic skin reaction.
Ingestion : Toxic if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Section 11. Toxicological information

**Inhalation**
- Adverse symptoms may include the following:
  - respiratory tract irritation
  - coughing
  - reduced fetal weight
  - increase in fetal deaths
  - skeletal malformations

**Skin contact**
- Adverse symptoms may include the following:
  - irritation
  - redness
  - 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**: May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- **Carcinogenicity**: No known significant effects or critical hazards.
- **Mutagenicity**: No known significant effects or critical hazards.
- **Reproductive toxicity**: May damage fertility or the unborn child.

**Numerical measures of toxicity**

<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>Ink Cartridge for Agilent 339X Integrators, Part Number 5181-1220</td>
<td>88.5</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2-Pyrrolidone</td>
<td>328</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Ethanediol</td>
<td>500</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Food Black 2 acid salt #3</td>
<td>5</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Date of issue: 10/27/2022
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>2-Pyrrolidone</td>
<td>Acute LC50 4600 to 10000 mg/l Fresh water</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute NOEC 4640 mg/l Fresh water</td>
<td></td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 6900000 µg/l Fresh water</td>
<td>Fish</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 41000 mg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 8050000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fish - Pimephales promelas</td>
<td>96 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>Ethanediol</td>
<td>OECD 301C Ready Biodegradability - Modified MITI Test (I)</td>
<td>90 to 100 % - 10 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pyrrolidone</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Ethanediol</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>( \text{LogP}_{ow} )</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Pyrrolidone</td>
<td>-0.71</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td></td>
<td>-1.36</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Ethanediol</td>
<td></td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

- **Soil/water partition coefficient (K\text{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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Date of issue**: 10/27/2022
Section 13. Disposal considerations

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

This Safety Data Sheet is written based on the encapsulated substance or mixture in this article. Since the hazardous ingredient is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

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

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

Transport in bulk according to IMO instruments: Not available.

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 Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Listed

Clean Air Act Section 602 Class I Substances: Not listed

Clean Air Act Section 602 Class II Substances: Not listed

DEA List I Chemicals (Precursor Chemicals): Not listed

DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ: Not applicable.

SARA 311/312

Classification: ACUTE TOXICITY (oral) - Category 3
SKIN SENSITIZATION - Category 1
TOXIC TO REPRODUCTION - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Date of issue: 10/27/2022
Section 15. Regulatory information

### Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
</table>
| 2-Pyrrolidone         | ≥25 - ≤50 | ACUTE TOXICITY (oral) - Category 4  
|                       |         | EYE IRRITATION - Category 2A  
|                       |         | TOXIC TO REPRODUCTION - Category 1B  
| Ethanediol            | ≥10 - ≤25 | ACUTE TOXICITY (oral) - Category 4  
|                       |         | EYE IRRITATION - Category 2A  
|                       |         | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
|                       |         | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
|                       |         | EYE IRRITATION - Category 2B  
|                       |         | ACUTE TOXICITY (oral) - Category 2  
|                       |         | SKIN SENSITIZATION - Category 1  
| Alkylol               | ≤10     | EYE IRRITATION - Category 2B  
| Food Black 2 acid salt #3 | ≤5      |                                      |

### SARA 313

<table>
<thead>
<tr>
<th>Supplier notification</th>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>Ethanediol</td>
<td>107-21-1</td>
<td>≥10 - ≤25</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: 2-PYRROLIDONE; ETHYLENE GLYCOL
- **New York**: The following components are listed: Ethylene glycol
- **New Jersey**: The following components are listed: ETHYLENE GLYCOL
- **Pennsylvania**: The following components are listed: 2-PYRROLIDINONE; 1,2-ETHANEDIOL
- **California Prop. 65**: 
  
  **WARNING**: This product can expose you to Ethylene Glycol, 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>Ethylene Glycol</td>
<td>-</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

### International regulations

- **Chemical Weapon Convention List Schedules I, II & III Chemicals**: Not listed.
- **Montreal Protocol**: Not listed.
- **Stockholm Convention on Persistent Organic Pollutants**: Not listed.
- **UNECE Aarhus Protocol on POPs and Heavy Metals**: Not listed.

### Inventory list

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

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**Date of issue**: 10/27/2022
Section 15. Regulatory information

Eurasian Economic Union: Russian Federation inventory: Not determined.
Japan:
   Japan inventory (CSCL): All components are listed or exempted.
   Japan inventory (ISHL): All components are listed or exempted.
New Zealand: All components are listed or exempted.
Philippines: Not determined.
Republic of Korea: All components are listed or exempted.
Taiwan: All components are listed or exempted.
Thailand: Not determined.
Turkey: Not determined.
United States: All components are active or exempted.
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>ACUTE TOXICITY (oral) - Category 3</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SKIN SENSITIZATION - Category 1</td>
<td>Calculation method</td>
</tr>
<tr>
<td>TOXIC TO REPRODUCTION - Category 1B</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

History

Date of issue: 10/27/2022
Date of previous issue: 10/28/2019
Version: 6

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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