**SAFETY DATA SHEET**

Agilent Seahorse XFp Real-Time ATP Rate Assay Kit, Part Number 103591-100

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**Section 1. Identification**

1. **Product identifier**

   - **Product name**: Agilent Seahorse XFp Real-Time ATP Rate Assay Kit, Part Number 103591-100
   - **Part no. (chemical kit)**: 103591-100
   - **Part no.** (Oligomycin): Not available.
   - **Part no.** (Antimycin A/ Rotenone): Not available.

2. **Validation date**: 7/30/2021

3. **Material uses**: For research use only. Not for use in diagnostic procedures (RUO).
   - **Oligomycin**: 3 x 1.144 mg
   - **Antimycin A/ Rotenone**: 3 x 1.145 mg

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**Section 2. Hazards identification**

1. **Classification of the substance or mixture**

   - **OSHA/HCS status**: Oligomycin
   - **Antimycin A/ Rotenone**: AQUATIC HAZARD (ACUTE) - Category 1
     - **H400**: AQUATIC HAZARD (ANIMAL) - Category 1
     - **H410**: AQUATIC HAZARD (LONG-TERM) - Category 1

2. **GHS label elements**

   - **Signal word**: Oligomycin - No signal word.
     - Antimycin A/ Rotenone - Warning
   - **Hazard statements**: Oligomycin - No known significant effects or critical hazards.
     - Antimycin A/ Rotenone - H410 - Very toxic to aquatic life with long lasting effects.
Section 2. Hazards identification

Prevention:
- **Oligomycin**
- **Antimycin A/ Rotenone**

Response:
- **Oligomycin**
- **Antimycin A/ Rotenone**

Storage:
- **Oligomycin**
- **Antimycin A/ Rotenone**

Disposal:
- **Oligomycin**
- **Antimycin A/ Rotenone**

Supplemental label elements:
- **Oligomycin**
- **Antimycin A/ Rotenone**

2.3 Other hazards

Hazards not otherwise classified:
- **Oligomycin**
- **Antimycin A/ Rotenone**

Section 3. Composition/information on ingredients

Substance/mixture:
- **Oligomycin**
- **Antimycin A/ Rotenone**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oligomycin</strong> Sodium chloride</td>
<td>≤3</td>
<td>7647-14-5</td>
</tr>
<tr>
<td><strong>Antimycin A/ Rotenone</strong> Sodium</td>
<td>≤3</td>
<td>7647-14-5</td>
</tr>
<tr>
<td>chlorides</td>
<td>≤0.3</td>
<td>1397-94-0</td>
</tr>
<tr>
<td>Antimycin A</td>
<td>≤0.3</td>
<td>83-79-4</td>
</tr>
<tr>
<td>(2R,6aS,12aS)-1,2,6,6a,12,12a-hexahydro-2-isopropenyl-8,9-dimethoxychromeno[3,4-b]furo[2,3-h]chromen-6-one</td>
<td>≤0.3</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 as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact:
- **Oligomycin**
  - Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- **Antimycin A/ Rotenone**
  - 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 irritation occurs.

Inhalation:
- **Oligomycin**
  - Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- **Antimycin A/ Rotenone**
  - Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give
Section 4. First aid measures

Skin contact: Oligomycin
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Antimycin A/ Rotenone
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion: Oligomycin
Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Antimycin A/ Rotenone
Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. 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: Oligomycin No known significant effects or critical hazards.
Antimycin A/ Rotenone No known significant effects or critical hazards.

Inhalation: Oligomycin No known significant effects or critical hazards.
Antimycin A/ Rotenone No known significant effects or critical hazards.

Skin contact: Oligomycin No known significant effects or critical hazards.
Antimycin A/ Rotenone No known significant effects or critical hazards.

Ingestion: Oligomycin No known significant effects or critical hazards.
Antimycin A/ Rotenone No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: Oligomycin No specific data.
Antimycin A/ Rotenone No specific data.

Inhalation: Oligomycin No specific data.
Antimycin A/ Rotenone No specific data.

Skin contact: Oligomycin No specific data.
Antimycin A/ Rotenone No specific data.

Ingestion: Oligomycin No specific data.
Antimycin A/ Rotenone No specific data.
Section 4. First aid measures

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

Notes to physician : Oligomycin
Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Antimycin A/ Rotenone
Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : Oligomycin
No specific treatment.
Antimycin A/ Rotenone
No specific treatment.

Protection of first-aiders : Oligomycin
No action shall be taken involving any personal risk or without suitable training.
Antimycin A/ Rotenone
No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : Antimycin A/ Rotenone
Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media : Oligomycin
Use an extinguishing agent suitable for the surrounding fire.
Antimycin A/ Rotenone
Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Oligomycin
None known.
Antimycin A/ Rotenone
None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical : Oligomycin
No specific fire or explosion hazard.
Antimycin A/ Rotenone
This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Oligomycin
Decomposition products may include the following materials:
halogenated compounds
metal oxide/oxides
Antimycin A/ Rotenone
Decomposition products may include the following materials:
halogenated compounds
metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Oligomycin
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.
Antimycin A/ Rotenone
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.
### Section 5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Special protective equipment for fire-fighters</th>
<th>Oligomycin</th>
<th>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>Oligomycin</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
</tbody>
</table>

### Section 6. Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

<table>
<thead>
<tr>
<th>For non-emergency personnel</th>
<th>Oligomycin</th>
<th>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. Put on appropriate personal protective equipment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>Oligomycin</td>
<td>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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For emergency responders</th>
<th>Oligomycin</th>
<th>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 &quot;For non-emergency personnel&quot;.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>Oligomycin</td>
<td>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 &quot;For non-emergency personnel&quot;.</td>
</tr>
</tbody>
</table>

#### 6.2 Environmental precautions

<table>
<thead>
<tr>
<th>Oligomycin</th>
<th>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).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Methods for cleaning up</th>
<th>Oligomycin</th>
<th>Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>Oligomycin</td>
<td>Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.</td>
</tr>
</tbody>
</table>

**Date of issue:** 07/30/2021
Section 7. Handling and storage

7.1 Precautions for safe handling

**Protective measures**

Oligomycin

Put on appropriate personal protective equipment (see Section 8).

Antimycin A/ Rotenone

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. 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**

Oligomycin

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.

Antimycin A/ Rotenone

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

**Oligomycin**

Storage temperature: room temperature. 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. 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.

**Antimycin A/ Rotenone**

Storage temperature: room temperature. 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. 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**

Oligomycin

Industrial applications, Professional applications.

Antimycin A/ Rotenone

Industrial applications, Professional applications.

**Industrial sector specific solutions**

Oligomycin

Not available.

Antimycin A/ Rotenone

Not available.

Date of issue: 07/30/2021
Section 8. Exposure controls/personal protection

8.1 Control parameters

### Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| **Oligomycin**  | Sodium chloride  
None. | |
| **Antimycin A** | Sodium chloride  
Antimycin A  
(2R,6aS,12aS)-1,2,6,6a,12a-hexahydro-2-isopropenyl-8,9-dimethoxychromeno[3,4-b]furo[2,3-h]chromen-6-one | None. 
ACGIH TLV (United States, 3/2020). 
TWA: 5 mg/m³ 8 hours. 
TWA: 5 mg/m³ 8 hours. 
NIOSH REL (United States, 10/2016). 
TWA: 5 mg/m³ 10 hours. 
OSHA PEL (United States, 5/2018). 
TWA: 5 mg/m³ 8 hours. |

8.2 Exposure controls

**Appropriate engineering controls**: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls**: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**

**Hygiene measures**: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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

**Skin protection**

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

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

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

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

Date of issue : 07/30/2021
### Section 9. Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Oligomycin</th>
<th>Antimycin A/ Rotenone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid.</td>
<td>Solid.</td>
</tr>
<tr>
<td>Color</td>
<td>White.</td>
<td>White.</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless.</td>
<td>Odorless.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### Section 10. Stability and reactivity

#### 10.1 Reactivity

<table>
<thead>
<tr>
<th>Product</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oligomycin</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
</tbody>
</table>

#### 10.2 Chemical stability

<table>
<thead>
<tr>
<th>Product</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oligomycin</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

10.3 Possibility of hazardous reactions
- Oligomycin: Under normal conditions of storage and use, hazardous reactions will not occur.
- Antimycin A/ Rotenone: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
- Oligomycin: No specific data.
- Antimycin A/ Rotenone: No specific data.

10.5 Incompatible materials
- Oligomycin: May react or be incompatible with oxidizing materials.
- Antimycin A/ Rotenone: May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products
- Oligomycin: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Antimycin A/ Rotenone: 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>Oligomycin</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimycin A</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>28 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>(2R,6aS,12aS)-1,2,6,6a,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12,12a-hexahydro-2-isopropenyl-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8,9-dimethoxychromeno-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[3,4-b]furo[2,3-h]chromen-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-one</td>
<td></td>
<td></td>
<td></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>Oligomycin</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 mg</td>
<td>-</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 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>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 mg</td>
<td>-</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 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>
<tr>
<td></td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1 %</td>
<td>-</td>
</tr>
<tr>
<td>(2R,6aS,12aS)-1,2,6,6a,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12,12a-hexahydro-2-isopropenyl-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8,9-dimethoxychromeno-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[3,4-b]furo[2,3-h]chromen-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date of issue: 07/30/2021
Section 11. Toxicological information

6-one

**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><strong>Antimycin A/ Rotenone</strong></td>
<td>Category 3</td>
<td>Category 3</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>(2R,6aS,12aS)-1,2,6,6a,12,12a-hexahydro-2-isopropenyl-8,9-dimethoxychromeno[3,4-b]furo[2,3-h]chromen-6-one</td>
<td></td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

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

Not available.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure**

Oligomycin

Antimycin A/ Rotenone

Not available.

**Potential acute health effects**

**Eye contact**

Oligomycin

Antimycin A/ Rotenone

No known significant effects or critical hazards.

**Inhalation**

Oligomycin

Antimycin A/ Rotenone

No known significant effects or critical hazards.

**Skin contact**

Oligomycin

Antimycin A/ Rotenone

No known significant effects or critical hazards.

**Ingestion**

Oligomycin

Antimycin A/ Rotenone

No known significant effects or critical hazards.

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

**Eye contact**

Oligomycin

Antimycin A/ Rotenone

No specific data.

**Inhalation**

Oligomycin

Antimycin A/ Rotenone

No specific data.

**Skin contact**

Oligomycin

Antimycin A/ Rotenone

No specific data.

**Ingestion**

Oligomycin

Antimycin A/ Rotenone

No specific data.

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

**Short term exposure**

**Potential immediate effects**: Not available.
Section 11. Toxicological information

Potential delayed effects: Not available.

Long term exposure: Not available.

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Potential chronic health effects:

General: Oligomycin
     Antimycin A / Rotenone
     No known significant effects or critical hazards.

Carcinogenicity: Oligomycin
     Antimycin A / Rotenone
     No known significant effects or critical hazards.

Mutagenicity: Oligomycin
     Antimycin A / Rotenone
     No known significant effects or critical hazards.

Reproductive toxicity: Oligomycin
     Antimycin A / Rotenone
     No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Oral (mg/kg)</th>
<th>Dermal (mg/kg)</th>
<th>Inhalation (gases) (ppm)</th>
<th>Inhalation (vapors) (mg/l)</th>
<th>Inhalation (dusts and mists) (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oligomycin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oligomycin</td>
<td>110784</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>3000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Antimycin A / Rotenone</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antimycin A / Rotenone</td>
<td>110285.4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>3000</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Antimycin A</td>
<td>28</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>(2R,6aS,12aS)-1,2,6,6a,12,12a-hexahydro-2-isopropenyl-8,9-dimethoxychromeno[3,4-b]furo[2,3-h]chromen-6-one</td>
<td>25</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</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><strong>Oligomycin</strong></td>
<td>Acute EC50 4.74 g/L Fresh water</td>
<td>Algae - Chlamydomonas reinhardtii</td>
<td>96 hours</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>Acute EC50 519.6 mg/l Fresh water</td>
<td>Crustaceans - Cypris subglobosa</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute IC50 6.87 mg/L Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1000000 µg/l Fresh water</td>
<td>Fish - Morone saxatilis - Larvae</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic LC10 781 mg/l Fresh water</td>
<td>Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>3 weeks</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 6 g/L Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.314 g/L Fresh water</td>
<td>Daphnia - Daphnia pulex</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 100 mg/l Fresh water</td>
<td>Fish - Gambusia holbrooki - Adult</td>
<td>8 weeks</td>
</tr>
</tbody>
</table>

**Antimycin A/ Rotenone**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>Acute EC50 4.74 g/L Fresh water</td>
<td>Algae - Chlamydomonas reinhardtii</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

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Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>4.1</td>
<td>25.7</td>
<td>low</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
Not available.

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>Antimycin A/ Rotenone</td>
<td>4.1</td>
<td>25.7</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

<table>
<thead>
<tr>
<th>Soil/water partition coefficient (K_{oc})</th>
<th>Antimycin A/ Rotenone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

: 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. |

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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

DOT / TDG / Mexico / IMDG / IATA

Additional information

Special provisions: De minimis quantities

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

Clean Water Act (CWA) 311: Nitric acid, iron(3+) salt, nonahydrate

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not 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 (lbs)</th>
<th>SARA 302 TPQ (gallons)</th>
<th>SARA 304 RQ (lbs)</th>
<th>SARA 304 RQ (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimycin A/ Rotenone</td>
<td>≤0.3</td>
<td>Yes.</td>
<td>1000 / 10000</td>
<td>1000</td>
<td>-</td>
</tr>
<tr>
<td>Antimycin A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SARA 304 RQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SARA 311/312</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Section 15. Regulatory information

**Classification**

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oligomycin</td>
<td></td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>≤3</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td>Antimycin A/ Rotenone</td>
<td></td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>≤3</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
</tbody>
</table>

**Composition/information on ingredients**

**State regulations**

- **Massachusetts**: None of the components are listed.
- **New York**: None of the components are listed.
- **New Jersey**: None of the components are listed.
- **Pennsylvania**: None of the components are listed.

**California Prop. 65**

This product does not require a Safe Harbor warning under California Prop. 65.

**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.

- **UNEP Aarhus Protocol on POPs and Heavy Metals**
  Not listed.

**Inventory list**

- **Australia**: Not determined.
- **Canada**: Not determined.
- **China**: Not determined.
- **Europe**: Not determined.
- **Japan**: Japan inventory (ENCS): 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.

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Section 16. Other information

History

<table>
<thead>
<tr>
<th>Date of issue</th>
<th>07/30/2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of previous issue</td>
<td>02/06/2018</td>
</tr>
<tr>
<td>Version</td>
<td>2</td>
</tr>
</tbody>
</table>

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

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQUATIC HAZARD (ACUTE) - Category 1</td>
<td>Calculation method</td>
</tr>
<tr>
<td>AQUATIC HAZARD (LONG-TERM) - 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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