




## Section 2. Hazards identification

### Antimycin A/ Rotenone

H400  
H410

AQUATIC HAZARD (ACUTE) - Category 1  
AQUATIC HAZARD (LONG-TERM) - Category 1

### 2.2 GHS label elements

<b>Hazard pictograms</b>	: <input checked="" type="checkbox"/> Antimycin A/ Rotenone	
<b>Signal word</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No signal word. No signal word. No signal word. Warning
<b>Hazard statements</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. H410 - Very toxic to aquatic life with long lasting effects.
<b>Precautionary statements</b>		
<b>Prevention</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. P273 - Avoid release to the environment.
<b>Response</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. P391 - Collect spillage.
<b>Storage</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Disposal</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	None known. None known. None known. None known.
<b>2.3 Other hazards</b>		
<b>Hazards not otherwise classified</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	None known. None known. None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: <input checked="" type="checkbox"/> K5099	Mixture
	Oligomycin	Mixture
	FCCP	Mixture
	Antimycin A/ Rotenone	Mixture

Ingredient name	%	CAS number
<input checked="" type="checkbox"/> Antimycin A/ Rotenone		
Antimycin A	≤0.3	1397-94-0
(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	≤0.3	83-79-4

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

<b>Eye contact</b>	: <input checked="" type="checkbox"/> K5099	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.
	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.
	FCCP	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. Get medical attention if irritation occurs.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> K5099	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Oligomycin	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	FCCP	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.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> K5099	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Oligomycin	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	FCCP	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

## Section 4. First aid measures

	Antimycin A/ Rotenone	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> K5099	Wash out mouth with water. 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.
	Oligomycin	Wash out mouth with water. 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.
	FCCP	Wash out mouth with water. 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. 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.

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

#### Potential acute health effects

<b>Eye contact</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No specific data. No specific data. No specific data. No specific data.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No specific data. No specific data. No specific data. No specific data.

## Section 4. First aid measures

<b>Skin contact</b>	: <input checked="" type="checkbox"/> K5099	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> K5099	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.

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

<b>Notes to physician</b>	: <input checked="" type="checkbox"/> K5099	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Oligomycin	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	FCCP	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.
<b>Specific treatments</b>	: <input checked="" type="checkbox"/> K5099	No specific treatment.
	Oligomycin	No specific treatment.
	FCCP	No specific treatment.
	Antimycin A/ Rotenone	No specific treatment.
<b>Protection of first-aiders</b>	: <input checked="" type="checkbox"/> K5099	No action shall be taken involving any personal risk or without suitable training.
	Oligomycin	No action shall be taken involving any personal risk or without suitable training.
	FCCP	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.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: <input checked="" type="checkbox"/> K5099	Use an extinguishing agent suitable for the surrounding fire.
	Oligomycin	Use an extinguishing agent suitable for the surrounding fire.
	FCCP	Use an extinguishing agent suitable for the surrounding fire.
	Antimycin A/ Rotenone	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: <input checked="" type="checkbox"/> K5099	None known.
	Oligomycin	None known.
	FCCP	None known.
	Antimycin A/ Rotenone	None known.

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

## Section 5. Fire-fighting measures

<b>Specific hazards arising from the chemical</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No specific fire or explosion hazard. No specific fire or explosion hazard. No specific fire or explosion hazard. 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.
<b>Hazardous thermal decomposition products</b>	: <input checked="" type="checkbox"/> K5099  Oligomycin  FCCP  Antimycin A/ Rotenone	Decomposition products may include the following materials: halogenated compounds metal oxide/oxides Decomposition products may include the following materials: halogenated compounds metal oxide/oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides Decomposition products may include the following materials: halogenated compounds metal oxide/oxides

### 5.3 Advice for firefighters

<b>Special protective actions for fire-fighters</b>	: <input checked="" type="checkbox"/> K5099  Oligomycin  FCCP  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. 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. 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. 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.
<b>Special protective equipment for fire-fighters</b>	: <input checked="" type="checkbox"/> K5099  Oligomycin  FCCP  Antimycin A/ Rotenone	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. 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**

:  K5099

Oligomycin

FCCP

Antimycin A/ Rotenone

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. 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. 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. 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.

**For emergency responders**

:  K5099

Oligomycin

FCCP

Antimycin A/ Rotenone

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". 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". 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". 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**

:  K5099

Oligomycin

FCCP

Antimycin A/ Rotenone

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). 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). 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). Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 6. Accidental release measures

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.

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

**Methods for cleaning up** : K5099

Oligomycin

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.

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.

FCCP

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.

Antimycin A/ Rotenone

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.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

**Protective measures** : K5099

Oligomycin

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

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

FCCP

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** : K5099

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.

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.

FCCP

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



## Section 7. Handling and storage

Antimycin A/ Rotenone

contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. 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

:  K5099

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.

FCCP

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.

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.

## Section 7. Handling and storage

### 7.3 Specific end use(s)

<b>Recommendations</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<input checked="" type="checkbox"/> <b>Antimycin A/ Rotenone</b> Antimycin A (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	None. <b>ACGIH TLV (United States, 1/2022).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2020).</b> TWA: 5 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. <b>CAL OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours.

#### Biological exposure indices

No exposure indices known.

### 8.2 Exposure controls

<b>Appropriate engineering controls</b>	: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
<b>Environmental exposure controls</b>	: 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

<b>Hygiene measures</b>	: 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.
<b>Eye/face protection</b>	: 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

## Section 8. Exposure controls/personal protection

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

<b>Physical state</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Solid. Solid. Solid. Solid.
<b>Color</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	White. White. Pale color. / Yellow. White.
<b>Odor</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Odorless. Odorless. Odorless. Odorless.
<b>Odor threshold</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.
<b>pH</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.
<b>Melting point/freezing point</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.
<b>Boiling point, initial boiling point, and boiling range</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.
<b>Flash point</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. Not applicable.

## Section 9. Physical and chemical properties and safety characteristics

<b>Evaporation rate</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.
<b>Flammability</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.
<b>Lower and upper explosion limit/flammability limit</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Vapor pressure</b>	: <input type="checkbox"/> Not available.	
<b>Relative vapor density</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Relative density</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.
<b>Solubility(ies)</b>	: Not available.	
<b>Partition coefficient: n-octanol/water</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Auto-ignition temperature</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Decomposition temperature</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.
<b>Viscosity</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable. Not applicable.
<b><u>Particle characteristics</u></b>		
<b>Median particle size</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available. Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: <input checked="" type="checkbox"/> K5099  Oligomycin  FCCP  Antimycin A/ Rotenone	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
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## Section 10. Stability and reactivity

<b>10.2 Chemical stability</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	The product is stable. The product is stable. The product is stable. The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: <input checked="" type="checkbox"/> K5099  Oligomycin  FCCP  Antimycin A/ Rotenone	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: <input checked="" type="checkbox"/> K5099 Oligomycin FCCP Antimycin A/ Rotenone	No specific data. No specific data. No specific data. No specific data.
<b>10.5 Incompatible materials</b>	: <input checked="" type="checkbox"/> K5099  Oligomycin  FCCP  Antimycin A/ Rotenone	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
<b>10.6 Hazardous decomposition products</b>	: <input checked="" type="checkbox"/> K5099  Oligomycin  FCCP  Antimycin A/ Rotenone	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. 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

Product/ingredient name	Result	Species	Dose	Exposure
<input checked="" type="checkbox"/> <b>Antimycin A/ Rotenone</b> Antimycin A (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	LD50 Oral LD50 Oral	Rat Rat	28 mg/kg 25 mg/kg	- -

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>Antimycin A/ Rotenone</b> (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	Eyes - Mild irritant	Rabbit	-	1 %	-

### 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)

Name	Category	Route of exposure	Target organs
<b>Antimycin A/ Rotenone</b> (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	Category 3 Category 3	-	Respiratory tract irritation Narcotic effects

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** :  K5099  
Oligomycin  
FCCP  
Antimycin A/ Rotenone

Not available.  
Not available.  
Not available.  
Not available.

### Potential acute health effects

**Eye contact** :  K5099  
Oligomycin  
FCCP  
Antimycin A/ Rotenone

No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.

**Inhalation** :  K5099  
Oligomycin  
FCCP  
Antimycin A/ Rotenone

No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.

**Skin contact** :  K5099  
Oligomycin  
FCCP  
Antimycin A/ Rotenone

No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.

**Ingestion** :  K5099  
Oligomycin  
FCCP  
Antimycin A/ Rotenone

No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.

## Section 11. Toxicological information

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

<b>Eye contact</b>	: <input checked="" type="checkbox"/> K5099	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> K5099	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> K5099	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> K5099	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	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.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

<b>General</b>	: <input checked="" type="checkbox"/> K5099	No known significant effects or critical hazards.
	Oligomycin	No known significant effects or critical hazards.
	FCCP	No known significant effects or critical hazards.
	Antimycin A/ Rotenone	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: <input checked="" type="checkbox"/> K5099	No known significant effects or critical hazards.
	Oligomycin	No known significant effects or critical hazards.
	FCCP	No known significant effects or critical hazards.
	Antimycin A/ Rotenone	No known significant effects or critical hazards.
<b>Mutagenicity</b>	: <input checked="" type="checkbox"/> K5099	No known significant effects or critical hazards.
	Oligomycin	No known significant effects or critical hazards.
	FCCP	No known significant effects or critical hazards.
	Antimycin A/ Rotenone	No known significant effects or critical hazards.
<b>Reproductive toxicity</b>	: <input checked="" type="checkbox"/> K5099	No known significant effects or critical hazards.
	Oligomycin	No known significant effects or critical hazards.
	FCCP	No known significant effects or critical hazards.
	Antimycin A/ Rotenone	No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

## Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
<b>UK5099</b> UK5099	109889.8	N/A	N/A	N/A	N/A
<b>Oligomycin</b> Oligomycin	110784.0	N/A	N/A	N/A	N/A
<b>FCCP</b> FCCP	110103.4	N/A	N/A	N/A	N/A
<b>Antimycin A/ Rotenone</b> Antimycin A/ Rotenone Antimycin A (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	110285.4 28 25	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>Antimycin A/ Rotenone</b> Antimycin A (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	Acute LC50 0.000019 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i> Crustaceans - <i>Simocephalus serrulatus</i> - Larvae	96 hours
	Acute EC50 190 µg/l Fresh water		48 hours
	Acute EC50 3.7 µg/l Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours
	Acute LC50 1.9 ppb Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours
	Chronic NOEC 0.3 ppb Fresh water	Daphnia - <i>Daphnia magna</i>	21 days
Chronic NOEC 1.01 ppb	Fish - <i>Oncorhynchus mykiss</i>	32 days	

### 12.2 Persistence and degradability

Not available.

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>Antimycin A/ Rotenone</b> (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	4.1	25.7	Low

### 12.4 Mobility in soil



## Section 12. Ecological information

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**12.5 Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

### 13.1 Waste treatment methods

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered 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.

**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** : Not regulated.

### Additional information

**Remarks:** 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** : **TSCA 4(a) proposed test rules:** Glycine  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**Clean Water Act (CWA) 307:** [[4-(trifluoromethoxy)phenyl]hydrazono]malononitrile  
**Clean Water Act (CWA) 311:** Nitric acid, iron(3+) salt, nonahydrate

## Section 15. Regulatory information

**Clean Air Act Section 112** : Listed

**(b) Hazardous Air Pollutants (HAPs)**

**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

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
<b>Antimycin A/ Rotenone</b> Antimycin A	≤0.3	Yes.	1000 / 10000	-	1000	-

**SARA 304 RQ** : 1544401.5 lbs / 701158.3 kg

**SARA 311/312**

**Classification** :  K5099  
Oligomycin  
FCCP  
Antimycin A/ Rotenone

Not applicable.  
Not applicable.  
Not applicable.  
Not applicable.

Composition/information on ingredients

No products were found.

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.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

## Section 15. Regulatory information

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Japan</b>	: <b>Japan inventory (CSCL):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
<b>New Zealand</b>	: Not determined.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: Not determined.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: Not determined.
<b>Viet Nam</b>	: Not determined.

## Section 16. Other information

### Procedure used to derive the classification

Classification	Justification
<input checked="" type="checkbox"/> <b>Antimycin A/ Rotenone</b> AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method Calculation method

### History

<b>Date of issue/Date of revision</b>	: 08/01/2023
<b>Date of previous issue</b>	: 04/14/2020
<b>Version</b>	: 4

### 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
: MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
: N/A = Not available
: UN = United Nations

Indicates information that has changed from previously issued version.

### Notice to reader

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