

SAFETY DATA SHEET

Seahorse XFp Cell Mito Stress Test Kit, Part Number 103010-100

Section 1. Identification

1.1 Product identifier

Product name : Seahorse XFp Cell Mito Stress Test Kit, Part Number 103010-100
Part No. (Chemical Kit) : 103010-100
Part No. : Oligomycin Not available.
 FCCP Not available.
 Antimycin A/ Rotenone Not available.
Validation date : 5/10/2016

1.2 Relevant identified uses of the substance or mixture and uses advised against

Material uses : For research use only. Not for use in diagnostic procedures (RUO).
 Oligomycin 6 x 1.144 mg
 FCCP 6 x 4.519 mg
 Antimycin A/ Rotenone 6 x 1.145 mg

1.3 Details of the supplier of the safety data sheet

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

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : Oligomycin	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
FCCP	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Antimycin A/ Rotenone	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

Not classified.

Section 2. Hazards identification

Ingredients of unknown toxicity	: Oligomycin	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 95.7%
	FCCP	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 96.6%
	Antimycin A/ Rotenone	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 96.2%

2.2 GHS label elements

Signal word	: Oligomycin	No signal word.
	FCCP	No signal word.
	Antimycin A/ Rotenone	No signal word.
Hazard statements	: 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.

Precautionary statements

Prevention	: Oligomycin	Not applicable.
	FCCP	Not applicable.
	Antimycin A/ Rotenone	Not applicable.
Response	: Oligomycin	Not applicable.
	FCCP	Not applicable.
	Antimycin A/ Rotenone	Not applicable.
Storage	: Oligomycin	Not applicable.
	FCCP	Not applicable.
	Antimycin A/ Rotenone	Not applicable.
Disposal	: Oligomycin	Not applicable.
	FCCP	Not applicable.
	Antimycin A/ Rotenone	Not applicable.
Supplemental label elements	: Oligomycin	None known.
	FCCP	None known.
	Antimycin A/ Rotenone	None known.

2.3 Other hazards

Hazards not otherwise classified	: Oligomycin	None known.
	FCCP	None known.
	Antimycin A/ Rotenone	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Oligomycin	Mixture
	FCCP	Mixture
	Antimycin A/ Rotenone	Mixture

Ingredient name	%	CAS number
Oligomycin Sodium chloride	≤3	7647-14-5
FCCP Sodium chloride	≤3	7647-14-5
Antimycin A/ Rotenone Sodium chloride	≤3	7647-14-5

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.

Section 3. Composition/information on ingredients

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.
	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.
Inhalation	: 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. Get medical attention if symptoms occur.
Skin contact	: 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.
	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.
	FCCP	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 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.

4.2 Most important symptoms/effects, acute and delayed

Section 4. First aid measures

Potential acute health effects

Eye contact	: 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.
Inhalation	: 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.
Skin contact	: 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.
Ingestion	: 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.

Over-exposure signs/symptoms

Eye contact	: Oligomycin FCCP Antimycin A/ Rotenone	No specific data. No specific data. No specific data.
Inhalation	: Oligomycin FCCP Antimycin A/ Rotenone	No specific data. No specific data. No specific data.
Skin contact	: Oligomycin FCCP Antimycin A/ Rotenone	No specific data. No specific data. No specific data.
Ingestion	: Oligomycin FCCP Antimycin A/ Rotenone	No specific data. No specific data. No specific data.

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

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

Suitable extinguishing media	: 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.
Unsuitable extinguishing media	: Oligomycin	None known.
	FCCP	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.
	FCCP	No specific fire or explosion hazard.
	Antimycin A/ Rotenone	No specific fire or explosion hazard.
Hazardous thermal decomposition products	: Oligomycin	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	FCCP	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	Antimycin A/ Rotenone	Decomposition products may include the following materials: carbon dioxide carbon monoxide 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.
	FCCP	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.
Special protective equipment for fire-fighters	: Oligomycin	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	FCCP	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Antimycin A/ Rotenone	Fire-fighters should wear appropriate protective

Section 5. Fire-fighting measures

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

: Oligomycin

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.

FCCP

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.

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.

For emergency responders

: Oligomycin

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".

FCCP

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".

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".

6.2 Environmental precautions

: Oligomycin

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).

FCCP

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).

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).

6.3 Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Methods for cleaning up	: 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.
	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	: Oligomycin	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).
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.
	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 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	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.
FCCP	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

Section 7. Handling and storage

Antimycin A/ Rotenone

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.

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.

7.3 Specific end use(s)

Recommendations	: Oligomycin FCCP Antimycin A/ Rotenone	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: Oligomycin FCCP Antimycin A/ Rotenone	Not applicable. Not applicable. Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Oligomycin Sodium chloride	None.
FCCP Sodium chloride	None.
Antimycin A/ Rotenone Sodium chloride	None.

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.
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Section 8. Exposure controls/personal protection

- 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.
- 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

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Oligomycin FCCP Antimycin A/ Rotenone	Solid. Solid. Solid.
Color	: Oligomycin FCCP Antimycin A/ Rotenone	White. Pale color. / Yellow. White.
Odor	: Oligomycin FCCP Antimycin A/ Rotenone	Odorless. Odorless. Odorless.
Odor threshold	: Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available.
pH	: Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available.
Melting point	: Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available.
Boiling point	: Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available.
Flash point	: Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available.
Evaporation rate	: Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available.
Flammability (solid, gas)	: Oligomycin FCCP Antimycin A/ Rotenone	Not available. Not available. Not available.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
Vapor pressure	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
Vapor density	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
Relative density	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
Solubility	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
Partition coefficient: n-octanol/water	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
Auto-ignition temperature	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
Decomposition temperature	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
Viscosity	: Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: Oligomycin	No specific test data related to reactivity available for this product or its ingredients.
	FCCP	No specific test data related to reactivity available for this product or its ingredients.
	Antimycin A/ Rotenone	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Oligomycin	The product is stable.
	FCCP	The product is stable.
	Antimycin A/ Rotenone	The product is stable.
10.3 Possibility of hazardous reactions	: Oligomycin	Under normal conditions of storage and use, hazardous reactions will not occur.
	FCCP	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.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.

Section 10. Stability and reactivity

10.5 Incompatible materials	: Oligomycin	May react or be incompatible with oxidizing materials.
	FCCP	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.
	FCCP	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

Product/ingredient name	Result	Species	Dose	Exposure
Oligomycin Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
FCCP Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
Antimycin A/ Rotenone Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Oligomycin Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams 10 milligrams 24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-		-
	Skin - Mild irritant	Rabbit	-		-
FCCP Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams 10 milligrams 24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-		-
	Skin - Mild irritant	Rabbit	-		-
Antimycin A/ Rotenone Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams 10 milligrams 24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-		-
	Skin - Mild irritant	Rabbit	-		-

Sensitization

Not available.

Section 11. Toxicological information

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	: Oligomycin	Routes of entry anticipated: Oral, Dermal, Inhalation.
	FCCP	Routes of entry anticipated: Oral, Dermal, Inhalation.
	Antimycin A/ Rotenone	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact	: 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.
Inhalation	: 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.
Skin contact	: 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.
Ingestion	: 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.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
Inhalation	: Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
Skin contact	: Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
Ingestion	: Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.

Section 11. Toxicological information

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	: 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.
Carcinogenicity	: 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.
Mutagenicity	: 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.
Teratogenicity	: 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.
Developmental effects	: 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.
Fertility effects	: 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.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oligomycin Oral	4782.4 mg/kg
FCCP Oral	3764.8 mg/kg
Antimycin A/ Rotenone Oral	4166.6 mg/kg

Section 12. Ecological information

12.1 Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure	
Oligomycin Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours	
	Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours	
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours	
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours	
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours	
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours	
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks	
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours	
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days	
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks	
	FCCP Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
		Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
Acute EC50 519.6 mg/l Fresh water		Crustaceans - Cypris subglobosa	48 hours	
Acute IC50 6.87 g/L Fresh water		Aquatic plants - Lemna minor	96 hours	
Acute LC50 1661 mg/l Fresh water		Daphnia - Daphnia magna	48 hours	
Acute LC50 1000000 µg/l Fresh water		Fish - Morone saxatilis - Larvae	96 hours	
Chronic LC10 781 mg/l Fresh water		Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks	
Chronic NOEC 6 g/L Fresh water		Aquatic plants - Lemna minor	96 hours	
Chronic NOEC 0.314 g/L Fresh water		Daphnia - Daphnia pulex	21 days	
Chronic NOEC 100 mg/l Fresh water		Fish - Gambusia holbrooki - Adult	8 weeks	
Antimycin A/ Rotenone Sodium chloride		Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
		Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours	
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours	
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours	
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours	
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks	
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours	
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days	
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks	

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Section 12. Ecological information

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. 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

Regulatory information

Additional information : Remarks
De minimis quantities

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : **United States inventory (TSCA 8b)**: Not determined.
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

Section 15. Regulatory information

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

SARA 304 RQ : 1158301.2 lbs / 525868.7 kg

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Oligomycin Sodium chloride	≤3	No.	No.	No.	Yes.	No.
FCCP Sodium chloride	≤3	No.	No.	No.	Yes.	No.
Antimycin A/ Rotenone Sodium chloride	≤3	No.	No.	No.	Yes.	No.

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

No products were found.

Canada inventory : Not determined.

International regulations

International lists : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Turkey inventory: Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Section 16. Other information

History

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Version : 1

✔ Indicates information that has changed from previously issued version.

Notice to reader

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