

SAFETY DATA SHEET



Seahorse XF Palmitate Oxidation Stress Test Kit, Part Number 103693-100

Section 1. Identification

1.1 Product identifier

Product name : Seahorse XF Palmitate Oxidation Stress Test Kit, Part Number 103693-100

Part no. (chemical kit) : 103693-100

Part no. :

Etomoxir	Not available.
L-Carnitine hydrochloride	Not available.
Oligomycin	Not available.
FCCP	Not available.
Antimycin A/ Rotenone	Not available.
Palmitate-BSA Conjugate	Not available.
BSA Control	Not available.

Validation date : 8/9/2023

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

Identified uses : For research use only.

Etomoxir	3 x 0.379 mg
L-Carnitine hydrochloride	3 x 10 mg
Oligomycin	3 x 5.722 mg
FCCP	3 x 22.593 mg
Antimycin A/ Rotenone	3 x 5.725 mg
Palmitate-BSA Conjugate	3 x 2 ml
BSA Control	3 x 2 ml

Uses advised against : Not for use in diagnostic procedures (RUO).

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 :	<input checked="" type="checkbox"/> Etomoxir L-Carnitine hydrochloride Oligomycin FCCP	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). 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. 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. While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR
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Section 2. Hazards identification

Antimycin A/ Rotenone	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.
Palmitate-BSA Conjugate	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). 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.
BSA Control	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

Etomoxir



H301	COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 3
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Antimycin A/ Rotenone

H400	AQUATIC HAZARD (ACUTE) - Category 1
H410	AQUATIC HAZARD (LONG-TERM) - Category 1
P almitate-BSA Conjugate	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 1.2%
BSA Control	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 1.2%

2.2 GHS label elements

Hazard pictograms

: E tomoxir	
Antimycin A/ Rotenone	

Signal word

: E tomoxir	Danger
L-Carnitine hydrochloride	No signal word.
Oligomycin	No signal word.
FCCP	No signal word.
Antimycin A/ Rotenone	Warning
Palmitate-BSA Conjugate	No signal word.
BSA Control	No signal word.

Section 2. Hazards identification

Hazard statements	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	H301 - Toxic if swallowed. May form combustible dust concentrations in air. 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. No known significant effects or critical hazards. No known significant effects or critical hazards.
<u>Precautionary statements</u>		
Prevention	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	P270 - Do not eat, drink or smoke when using this product. P264 - Wash thoroughly after handling. Not applicable. Not applicable. Not applicable. P273 - Avoid release to the environment. Not applicable. Not applicable.
Response	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Not applicable. Not applicable. Not applicable. P391 - Collect spillage. Not applicable. Not applicable.
Storage	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. Not applicable.
Supplemental label elements	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation. None known. None known. None known. None known. None known. None known.

2.3 Other hazards

Section 2. Hazards identification

Hazards not otherwise classified	: Etomoxir	None known.
	L-Carnitine hydrochloride	None known.
	Oligomycin	None known.
	FCCP	None known.
	Antimycin A/ Rotenone	None known.
	Palmitate-BSA Conjugate	None known.
	BSA Control	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Etomoxir	Substance
	L-Carnitine hydrochloride	Substance
	Oligomycin	Mixture
	FCCP	Mixture
	Antimycin A/ Rotenone	Mixture
	Palmitate-BSA Conjugate	Mixture
	BSA Control	Mixture

Ingredient name	%	CAS number
Etomoxir		
(R)-(+)-2-[6-(4-Chlorophenoxy)hexyl]-oxirane-2-carboxylic acid sodium salt	100	828934-41-4
L-Carnitine hydrochloride		
(R)-(3-carboxy-2-hydroxypropyl)trimethylammonium chloride	98	6645-46-1
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

Eye contact	: Etomoxir	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.
	L-Carnitine hydrochloride	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.

Section 4. First aid measures

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.

Palmitate-BSA Conjugate

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.

BSA Control

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

: Etomoxir

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 mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

L-Carnitine hydrochloride

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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.

Palmitate-BSA Conjugate

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

BSA Control

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 4. First aid measures

Skin contact	: Etomoxir	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	L-Carnitine hydrochloride	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.
	Antimycin A/ Rotenone	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Palmitate-BSA Conjugate	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	BSA Control	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: Etomoxir	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	L-Carnitine hydrochloride	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.

Section 4. First aid measures

Palmitate-BSA Conjugate

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.

BSA Control

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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact

: Etomoxir

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

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

Inhalation

: Etomoxir

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

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

Skin contact

: Etomoxir

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

L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

Ingestion

: Etomoxir

Toxic if swallowed.

L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

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.
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

: Etomoxir

Adverse symptoms may include the following:
irritation
redness

L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

No specific data.
No specific data.
No specific data.
No specific data.
No specific data.
No specific data.

Section 4. First aid measures

Inhalation	: Etomoxir	Adverse symptoms may include the following: respiratory tract irritation coughing
	L-Carnitine hydrochloride	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
	Palmitate-BSA Conjugate	No specific data.
	BSA Control	No specific data.
Skin contact	: Etomoxir	No specific data.
	L-Carnitine hydrochloride	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
	Palmitate-BSA Conjugate	No specific data.
	BSA Control	No specific data.
Ingestion	: Etomoxir	No specific data.
	L-Carnitine hydrochloride	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
	Palmitate-BSA Conjugate	No specific data.
	BSA Control	No specific data.

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

Notes to physician	: Etomoxir	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	L-Carnitine hydrochloride	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	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.
	Palmitate-BSA Conjugate	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	BSA Control	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: Etomoxir	No specific treatment.
	L-Carnitine hydrochloride	No specific treatment.
	Oligomycin	No specific treatment.
	FCCP	No specific treatment.
	Antimycin A/ Rotenone	No specific treatment.
	Palmitate-BSA Conjugate	No specific treatment.
	BSA Control	No specific treatment.

Section 4. First aid measures

Protection of first-aiders	: Etomoxir	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.
	L-Carnitine hydrochloride	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.
	Palmitate-BSA Conjugate	No action shall be taken involving any personal risk or without suitable training.
	BSA Control	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	: Etomoxir	Use dry chemical powder.
	L-Carnitine hydrochloride	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.
	Palmitate-BSA Conjugate	Use an extinguishing agent suitable for the surrounding fire.
	BSA Control	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: Etomoxir	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
	L-Carnitine hydrochloride	None known.
	Oligomycin	None known.
	FCCP	None known.
	Antimycin A/ Rotenone	None known.
	Palmitate-BSA Conjugate	None known.
	BSA Control	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: Etomoxir	May form explosible dust-air mixture if dispersed.
	L-Carnitine hydrochloride	No specific fire or explosion hazard.
	Oligomycin	No specific fire or explosion hazard.
	FCCP	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.
	Palmitate-BSA Conjugate	In a fire or if heated, a pressure increase will occur and the container may burst.
	BSA Control	In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products

: Etomoxir

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
halogenated compounds
carbonyl halides
metal oxide/oxides

L-Carnitine hydrochloride

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds

Oligomycin

Decomposition products may include the following materials:

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:

halogenated compounds
metal oxide/oxides

Palmitate-BSA Conjugate

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides

BSA Control

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters

: Etomoxir

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

L-Carnitine hydrochloride

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.

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

Section 5. Fire-fighting measures

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.

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.

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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.

Special protective equipment for fire-fighters

: Etomoxir

L-Carnitine hydrochloride

Oligomycin

FCCP

Antimycin A/ Rotenone

Palmitate-BSA Conjugate

BSA Control

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: Etomoxir

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

L-Carnitine hydrochloride

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.

Oligomycin

No action shall be taken involving any personal

Section 6. Accidental release measures

6.2 Environmental precautions	: Etomoxir	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).
	L-Carnitine hydrochloride	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).
	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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
	Palmitate-BSA Conjugate	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).
	BSA Control	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	: Etomoxir	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.
	L-Carnitine hydrochloride	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.
	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

Section 6. Accidental release measures

Palmitate-BSA Conjugate

waste container. Dispose of via a licensed waste disposal contractor.

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

BSA Control

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures : Etomoxir

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame).

Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

L-Carnitine hydrochloride

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

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). 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.

Palmitate-BSA Conjugate

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

BSA Control

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

Section 7. Handling and storage

Advice on general occupational hygiene

: tomoxir

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.

L-Carnitine hydrochloride
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.

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.

Palmitate-BSA Conjugate
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.

BSA Control
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

: tomoxir

Storage temperature: room temperature.
Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be

Section 7. Handling and storage

L-Carnitine hydrochloride

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. 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.

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.

Palmitate-BSA Conjugate

Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). 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

Section 7. Handling and storage

BSA Control

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. Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). 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

: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
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Industrial sector specific solutions

: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	Not available. Not available. Not available. Not available. Not available. Not available. Not available.
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Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Etomoxir (R)-(+)-2-[6-(4-Chlorophenoxy)hexyl]-oxirane-2-carboxylic acid sodium salt	None.
L-Carnitine hydrochloride (R)-(3-carboxy-2-hydroxypropyl)trimethylammonium chloride	None.
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	None. ACGIH TLV (United States, 1/2022). TWA: 5 mg/m ³ 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 5 mg/m ³ 10 hours. OSHA PEL (United States, 5/2018). TWA: 5 mg/m ³ 8 hours.

Section 8. Exposure controls/personal protection

CAL OSHA PEL (United States, 5/2018).
TWA: 5 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

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.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	:	Etomoxir	Solid. [Powder.]
		L-Carnitine hydrochloride	Solid.
		Oligomycin	Solid.
		FCCP	Solid.
		Antimycin A/ Rotenone	Solid.
		Palmitate-BSA Conjugate	Liquid.
		BSA Control	Liquid.

Section 9. Physical and chemical properties and safety characteristics

Color	: Etomoxir	White.
	L-Carnitine hydrochloride	Not available.
	Oligomycin	White.
	FCCP	Pale color. / Yellow.
	Antimycin A/ Rotenone	White.
	Palmitate-BSA Conjugate	Not available.
Odor	: Etomoxir	Not available.
	L-Carnitine hydrochloride	Not available.
	Oligomycin	Odorless.
	FCCP	Odorless.
	Antimycin A/ Rotenone	Odorless.
	Palmitate-BSA Conjugate	Not available.
Odor threshold	: Etomoxir	Not available.
	L-Carnitine hydrochloride	Not available.
	Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
	Palmitate-BSA Conjugate	Not available.
pH	: Etomoxir	Not available.
	L-Carnitine hydrochloride	Not available.
	Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
	Palmitate-BSA Conjugate	Not available.
Melting point/freezing point	: Etomoxir	Not available.
	L-Carnitine hydrochloride	142°C (287.6°F)
	Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
	Palmitate-BSA Conjugate	0°C (32°F)
Boiling point, initial boiling point, and boiling range	: Etomoxir	Not available.
	L-Carnitine hydrochloride	Not available.
	Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
	Palmitate-BSA Conjugate	100°C (212°F)
Flash point	: Etomoxir	Not applicable.
	L-Carnitine hydrochloride	Not applicable.
	Oligomycin	Not applicable.
	FCCP	Not applicable.
	Antimycin A/ Rotenone	Not applicable.
	Palmitate-BSA Conjugate	Not available.
Evaporation rate	: Etomoxir	Not available.
	L-Carnitine hydrochloride	Not available.
	Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
	Palmitate-BSA Conjugate	Not available.
BSA Control	Not available.	

Section 9. Physical and chemical properties and safety characteristics

Flammability :

Etomoxir	Not available.
L-Carnitine hydrochloride	Not available.
Oligomycin	Not available.
FCCP	Not available.
Antimycin A/ Rotenone	Not available.
Palmitate-BSA Conjugate	Not applicable.
BSA Control	Not applicable.

Lower and upper explosion limit/flammability limit :

Etomoxir	Not applicable.
L-Carnitine hydrochloride	Not applicable.
Oligomycin	Not applicable.
FCCP	Not applicable.
Antimycin A/ Rotenone	Not applicable.
Palmitate-BSA Conjugate	Not available.
BSA Control	Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Palmitate-BSA Conjugate						
water	17.5	2.3	-	92.258	12.3	-
BSA Control						
water	17.5	2.3	-	92.258	12.3	-

Relative vapor density :

Etomoxir	Not applicable.
L-Carnitine hydrochloride	Not applicable.
Oligomycin	Not applicable.
FCCP	Not applicable.
Antimycin A/ Rotenone	Not applicable.
Palmitate-BSA Conjugate	Not available.
BSA Control	Not available.

Relative density :

Etomoxir	Not available.
L-Carnitine hydrochloride	Not available.
Oligomycin	Not available.
FCCP	Not available.
Antimycin A/ Rotenone	Not available.
Palmitate-BSA Conjugate	Not available.
BSA Control	Not available.

Solubility(ies) :

Media	Result
Etomoxir	
water	Soluble
L-Carnitine hydrochloride	
water	Soluble
Palmitate-BSA Conjugate	
water	Soluble
BSA Control	
water	Soluble

Partition coefficient: n-octanol/water :

Etomoxir	Not available.
L-Carnitine hydrochloride	-0.975
Oligomycin	Not applicable.
FCCP	Not applicable.
Antimycin A/ Rotenone	Not applicable.
Palmitate-BSA Conjugate	Not applicable.
BSA Control	Not applicable.

Section 9. Physical and chemical properties and safety characteristics

Auto-ignition temperature	: Etomoxir	Not applicable.
	L-Carnitine hydrochloride	Not applicable.
	Oligomycin	Not applicable.
	FCCP	Not applicable.
	Antimycin A/ Rotenone	Not applicable.
Decomposition temperature	: Etomoxir	Not available.
	L-Carnitine hydrochloride	Not available.
	Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
	Palmitate-BSA Conjugate	Not available.
Viscosity	: Etomoxir	Not applicable.
	L-Carnitine hydrochloride	Not applicable.
	Oligomycin	Not applicable.
	FCCP	Not applicable.
	Antimycin A/ Rotenone	Not applicable.
Particle characteristics		
	Median particle size	
	: Etomoxir	Not available.
	L-Carnitine hydrochloride	Not available.
	Oligomycin	Not available.
	FCCP	Not available.
	Antimycin A/ Rotenone	Not available.
	Palmitate-BSA Conjugate	Not applicable.
	BSA Control	Not applicable.

Section 10. Stability and reactivity

10.1 Reactivity	: Etomoxir	No specific test data related to reactivity available for this product or its ingredients.
	L-Carnitine hydrochloride	No specific test data related to reactivity available for this product or its ingredients.
	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.
	Palmitate-BSA Conjugate	No specific test data related to reactivity available for this product or its ingredients.
	BSA Control	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Etomoxir	The product is stable.
	L-Carnitine hydrochloride	The product is stable.
	Oligomycin	The product is stable.
	FCCP	The product is stable.
	Antimycin A/ Rotenone	The product is stable.
	Palmitate-BSA Conjugate	The product is stable.
	BSA Control	The product is stable.

Section 10. Stability and reactivity

10.3 Possibility of hazardous reactions	: Etomoxir	Under normal conditions of storage and use, hazardous reactions will not occur.
	L-Carnitine hydrochloride	Under normal conditions of storage and use, hazardous reactions will not occur.
	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.
	Palmitate-BSA Conjugate	Under normal conditions of storage and use, hazardous reactions will not occur.
	BSA Control	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Etomoxir	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.
	L-Carnitine hydrochloride	No specific data.
	Oligomycin	No specific data.
	FCCP	No specific data.
	Antimycin A/ Rotenone	No specific data.
	Palmitate-BSA Conjugate	No specific data.
	BSA Control	No specific data.
10.5 Incompatible materials	: Etomoxir	Reactive or incompatible with the following materials: oxidizing materials
	L-Carnitine hydrochloride	May react or be incompatible with oxidizing 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.
	Palmitate-BSA Conjugate	May react or be incompatible with oxidizing materials.
	BSA Control	May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	: Etomoxir	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	L-Carnitine hydrochloride	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	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 10. Stability and reactivity

Palmitate-BSA Conjugate	produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.
BSA Control	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
L-Carnitine hydrochloride (R)-(3-carboxy-2-hydroxypropyl) trimethylammonium chloride	LD50 Oral	Rat	6890 mg/kg	-
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	LD50 Oral LD50 Oral	Rat Rat	28 mg/kg 25 mg/kg	- -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Antimycin A/ Rotenone (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
Antimycin A/ Rotenone (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

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: Etomoxir
L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

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

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

Not available.

Not available.

Not available.

Not available.

Not available.

Potential acute health effects

Eye contact

: Etomoxir
L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

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.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Inhalation

: Etomoxir
L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

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.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Skin contact

: Etomoxir
L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

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.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Ingestion

: Etomoxir
L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

Toxic if swallowed.

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.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact	:	Etomoxir	Adverse symptoms may include the following: irritation redness
		L-Carnitine hydrochloride	No specific data.
		Oligomycin	No specific data.
		FCCP	No specific data.
		Antimycin A/ Rotenone	No specific data.
Inhalation	:	Etomoxir	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Carnitine hydrochloride	No specific data.
		Oligomycin	No specific data.
		FCCP	No specific data.
		Antimycin A/ Rotenone	No specific data.
Skin contact	:	Etomoxir	No specific data.
		L-Carnitine hydrochloride	No specific data.
		Oligomycin	No specific data.
		FCCP	No specific data.
		Antimycin A/ Rotenone	No specific data.
Ingestion	:	Etomoxir	No specific data.
		L-Carnitine hydrochloride	No specific data.
		Oligomycin	No specific data.
		FCCP	No specific data.
		Antimycin A/ Rotenone	No specific data.
		Palmitate-BSA Conjugate	No specific data.
		BSA Control	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

General	:	Etomoxir	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
		L-Carnitine hydrochloride	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.
		Palmitate-BSA Conjugate	No known significant effects or critical hazards.
		BSA Control	No known significant effects or critical hazards.

Section 11. Toxicological information

Carcinogenicity	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	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. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	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. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Reproductive toxicity	: Etomoxir L-Carnitine hydrochloride Oligomycin FCCP Antimycin A/ Rotenone Palmitate-BSA Conjugate BSA Control	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. 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

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Etomoxir (R)-(+)-2-[6-(4-Chlorophenoxy)hexyl]-oxirane-2-carboxylic acid sodium salt	100	N/A	N/A	N/A	N/A
L-Carnitine hydrochloride (R)-(3-carboxy-2-hydroxypropyl)trimethylammonium chloride	6890	N/A	N/A	N/A	N/A
Oligomycin Oligomycin	110784.0	N/A	N/A	N/A	N/A
FCCP FCCP	110103.4	N/A	N/A	N/A	N/A
Antimycin A/ Rotenone Antimycin A/ Rotenone	110285.4	N/A	N/A	N/A	N/A
Antimycin A	28	N/A	N/A	N/A	N/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	25	N/A	N/A	N/A	N/A

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
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	Acute LC50 0.000019 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours
	Acute EC50 190 µg/l Fresh water	Crustaceans - <i>Simocephalus serrulatus</i> - Larvae	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 _{ow}	BCF	Potential
L-Carnitine hydrochloride L-Carnitine hydrochloride (R)-(3-carboxy- 2-hydroxypropyl) trimethylammonium chloride	-0.975	-	Low
	-0.975	-	Low
Antimycin A/ Rotenone (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

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains

Section 13. Disposal considerations

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.

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

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

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

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 : 2702702.7 lbs / 1227027 kg

Section 15. Regulatory information

SARA 311/312

Classification

: Etomoxir

L-Carnitine hydrochloride
Oligomycin
FCCP
Antimycin A/ Rotenone
Palmitate-BSA Conjugate
BSA Control

COMBUSTIBLE DUSTS
ACUTE TOXICITY (oral) - Category 3
Not applicable.
Not applicable.
Not applicable.
Not applicable.
Not applicable.
Not applicable.

Composition/information on ingredients

Name	%	Classification
Etomoxir (R)-(+)-2-[6-(4-Chlorophenoxy)hexyl]-oxirane-2-carboxylic acid sodium salt	100	COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 3

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

Australia : Not determined.

Canada : Not determined.

China : Not determined.

Japan : **Japan inventory (CSCL):** Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : Not determined.

Philippines : Not determined.

Republic of Korea : Not determined.

Taiwan : Not determined.

Thailand : Not determined.

Turkey : Not determined.

United States : Not determined.

Viet Nam : Not determined.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
Etomoxir COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 3	On basis of test data Expert judgment
Antimycin A/ Rotenone AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method Calculation method

History

Date of issue/Date of revision : 08/09/2023

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Version : 3

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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