

Abamectin (with Propylene Glycol) Formulation

Version 1.10 Revision Date: 30.09.2023 SDS Number: 4795009-00011 Date of last issue: 04.04.2023
Date of first issue: 29.08.2019

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Abamectin (with Propylene Glycol) Formulation

Manufacturer or supplier's details

Company : MSD

Address : 50 Tuas West Drive
Singapore - Singapore 638408

Telephone : +1-908-740-4000

Emergency telephone number : 65 6697 2111 (24/7/365)

E-mail address : EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product

Restrictions on use : Not applicable

2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 2

Acute toxicity (Inhalation) : Category 4

Serious eye damage/eye irritation : Category 2

Specific target organ toxicity - repeated exposure : Category 2 (Central nervous system)

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :



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- Signal word : Danger
- Hazard statements : H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.
- Precautionary statements : **Prevention:**
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P241 Use explosion-proof electrical/ ventilating/ lighting equip-ment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protec-tion/ face protection.
- Response:**
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediat-ely all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/ attention if you feel unwell.
P337 + P313 If eye irritation persists: Get medical advice/ at-tention.
P391 Collect spillage.
- Storage:**
P403 + P235 Store in a well-ventilated place. Keep cool.
- Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

Vapours may form explosive mixture with air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
1,3-Dioxan-5-ol	4740-78-7	>= 30 -< 50
Butanone	78-93-3	>= 10 -< 20
abamectin (combination of avermectin B1a and avermectin B1b) (ISO)	71751-41-2	>= 1 -< 2.5

4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
 When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.
 If not breathing, give artificial respiration.
 If breathing is difficult, give oxygen.
 Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
 Remove contaminated clothing and shoes.
 Get medical attention.
 Wash clothing before reuse.
 Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
 If easy to do, remove contact lens, if worn.
 Get medical attention.
- If swallowed : If swallowed, DO NOT induce vomiting.
 If vomiting occurs have person lean forward.
 Call a physician or poison control centre immediately.
 Rinse mouth thoroughly with water.
 Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.
 Harmful if inhaled.
 May cause damage to organs through prolonged or repeated exposure.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- Notes to physician : Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
 Alcohol-resistant foam
 Carbon dioxide (CO₂)
 Dry chemical

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- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.
Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Carbon oxides
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.
-

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition.
Ventilate the area.
Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
- Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Non-sparking tools should be used.
Soak up with inert absorbent material.
Suppress (knock down) gases/vapours/mists with a water spray jet.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
Use explosion-proof electrical, ventilating and lighting equipment.
- Advice on safe handling : Do not breathe mist or vapours.
Do not swallow.
Do not get in eyes.
Avoid prolonged or repeated contact with skin.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Non-sparking tools should be used.
Keep container tightly closed.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharges.
Do not eat, drink or smoke when using this product.
Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labelled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.
Keep away from heat and sources of ignition.
- Materials to avoid : Do not store with the following product types:
Self-reactive substances and mixtures
Organic peroxides
Oxidizing agents
Flammable gases
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Poisonous gases
Explosives

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis

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Butanone	78-93-3	PEL (short term)	300 ppm 885 mg/m ³	SG OEL
		PEL (long term)	200 ppm 590 mg/m ³	SG OEL
		TWA	200 ppm	ACGIH
		STEL	300 ppm	ACGIH
abamectin (combination of avermectin B1a and avermectin B1b) (ISO)	71751-41-2	TWA	15 µg/m ³ (OEB 3)	Internal
		Wipe limit	150 µg/100 cm ²	Internal

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Butanone	78-93-3	methyl ethyl ketone	Urine	End of shift (As soon as possible after exposure ceases)	2 mg/l	ACGIH BEI

Engineering measures : Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).
All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.
Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).
Minimize open handling.
Use explosion-proof electrical, ventilating and lighting equipment.

Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapour type

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.

Eye protection : Wear safety glasses with side shields or goggles.
If the work environment or activity involves dusty conditions,

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- mists or aerosols, wear the appropriate goggles.
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.
- Skin and body protection** : Work uniform or laboratory coat.
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
Use appropriate degowning techniques to remove potentially contaminated clothing.
- Hygiene measures** : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : liquid
- Colour** : Colorless to pale yellow
- Odour** : characteristic
- Odour Threshold** : No data available
- pH** : No data available
- Melting point/freezing point** : < -66 °C
- Initial boiling point and boiling range** : 82 °C
- Flash point** : 16 °C
- Evaporation rate** : No data available
- Flammability (solid, gas)** : Not applicable
- Flammability (liquids)** : Not applicable
- Upper explosion limit / Upper flammability limit** : No data available
- Lower explosion limit / Lower** : No data available

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flammability limit

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 1.05 - 1.09

Density : No data available

Solubility(ies)

 Water solubility : slightly soluble

 Solubility in other solvents : soluble
 Solvent: Ethanol

Partition coefficient: n-
octanol/water : Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

 Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available

Particle size : Not applicable

10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-
tions : Highly flammable liquid and vapour.
Vapours may form explosive mixture with air.
Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition
products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

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Information on likely routes of exposure : Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity

Harmful if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 2.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:**1,3-Dioxan-5-ol:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Remarks: Based on data from similar materials

Butanone:

Acute oral toxicity : LD50 (Rat): > 2,000 - 5,000 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 25.5 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 436
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Acute oral toxicity : LD50 (Rat): 24 mg/kg
LD50 (Mouse): 10 mg/kg
LDLo (Monkey): 24 mg/kg
Symptoms: Dilatation of the pupil

Acute inhalation toxicity : LC50 (Rat): 0.023 mg/l

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Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): 330 mg/kg
LD50 (Rabbit): 2,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:**1,3-Dioxan-5-ol:**

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
Remarks : Based on data from similar materials

Butanone:

Assessment : Repeated exposure may cause skin dryness or cracking.
Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
Remarks : Based on data from similar materials

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:**1,3-Dioxan-5-ol:**

Species : Rabbit
Result : Irritation to eyes, reversing within 21 days
Method : OECD Test Guideline 405
Remarks : Based on data from similar materials

Butanone:

Species : Rabbit
Result : Irritation to eyes, reversing within 21 days
Method : OECD Test Guideline 405

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abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Species : Rabbit
Result : Mild eye irritation

Respiratory or skin sensitisation**Skin sensitisation**

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:**1,3-Dioxan-5-ol:**

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative
Remarks : Based on data from similar materials

Butanone:

Test Type : Buehler Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Test Type : Maximisation Test
Exposure routes : Skin contact
Result : Not a skin sensitizer.

Germ cell mutagenicity

Not classified based on available information.

Components:**1,3-Dioxan-5-ol:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
cytogenetic assay)
Species: Mouse

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Result: negative
Remarks: Based on data from similar materials

Butanone:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: negative

Test Type: Saccharomyces cerevisiae, gene mutation assay (in vitro)
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Result: negative

Test Type: Alkaline elution assay
Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Carcinogenicity

Not classified based on available information.

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Components:

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Species : Rat
 Application Route : Oral
 Exposure time : 105 weeks
 Result : negative

Species : Mouse
 Application Route : Oral
 Exposure time : 93 weeks
 Result : negative

Reproductive toxicity

Not classified based on available information.

Components:

Butanone:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
 Species: Rat
 Application Route: Ingestion
 Result: negative
 Remarks: Based on data from similar materials

Effects on foetal develop-
 ment : Test Type: Embryo-foetal development
 Species: Rat
 Application Route: Inhalation
 Method: OECD Test Guideline 414
 Result: negative

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Effects on fertility : Test Type: Fertility
 Species: Rat, male
 Application Route: Oral
 Result: Effects on fertility

Test Type: Two-generation reproduction toxicity study
 Species: Rat
 Application Route: Oral
 Early Embryonic Development: NOAEL: 0.12 mg/kg body weight
 Result: Fetotoxicity

Effects on foetal develop-
 ment : Test Type: Embryo-foetal development
 Species: Mouse
 Application Route: Oral
 General Toxicity Maternal: NOAEL: 0.05 mg/kg body weight
 Developmental Toxicity: NOAEL: 0.2 mg/kg body weight
 Result: Cleft palate

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Remarks: Adverse developmental effects were observed

Test Type: Embryo-foetal development
 Species: Rabbit
 Application Route: Oral
 Developmental Toxicity: LOAEL: 2 mg/kg body weight
 Result: Cleft palate, Teratogenic effects, Reduced embryonic survival
 Remarks: Adverse developmental effects were observed

Test Type: Development
 Species: Rat
 Application Route: Oral
 Developmental Toxicity: LOAEL: 1.6 mg/kg body weight
 Result: Teratogenic effects

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments., Some evidence of adverse effects on development, based on animal experiments.

STOT - single exposure

Not classified based on available information.

Components:

Butanone:

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

May cause damage to organs (Central nervous system) through prolonged or repeated exposure.

Components:

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Exposure routes : Ingestion
 Target Organs : Central nervous system
 Assessment : Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Butanone:

Species : Rat
 NOAEL : 14.84 mg/l
 Application Route : inhalation (vapour)
 Exposure time : 90 Days
 Method : OECD Test Guideline 413

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abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Species : Rat
 NOAEL : 1.5 mg/kg
 Application Route : Oral
 Exposure time : 24 Months
 Target Organs : Central nervous system
 Symptoms : Tremors, ataxia

Species : Mouse
 NOAEL : 4.0 mg/kg
 Application Route : Oral
 Exposure time : 24 Months
 Target Organs : Central nervous system
 Symptoms : Tremors, ataxia

Species : Dog
 NOAEL : 0.25 mg/kg
 LOAEL : 0.5 mg/kg
 Application Route : Oral
 Exposure time : 53 Weeks
 Target Organs : Central nervous system
 Symptoms : Tremors, weight loss
 Remarks : mortality observed

Species : Monkey
 NOAEL : 1.0 mg/kg
 Application Route : Oral
 Exposure time : 14 Weeks
 Target Organs : Central nervous system

Aspiration toxicity

Not classified based on available information.

Components:

Butanone:

The substance or mixture causes concern owing to the assumption that it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Ingestion : Symptoms: May cause, Tremors, Diarrhoea, central nervous system effects, Salivation, tearing

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12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****1,3-Dioxan-5-ol:**

- Toxicity to fish : LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Remarks: Based on data from similar materials
- Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Remarks: Based on data from similar materials
- NOELR (Pseudokirchneriella subcapitata (green algae)): > 1 mg/l
Exposure time: 72 h
Remarks: Based on data from similar materials
- Toxicity to microorganisms : EC10: > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Butanone:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2,993 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 308 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 2,029 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201
- NOEC (Pseudokirchneriella subcapitata (green algae)): 1,240 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

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abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

<p>Toxicity to fish</p> <p>LC50 (Oncorhynchus mykiss (rainbow trout)): 3.2 µg/l Exposure time: 96 h</p> <p>LC50 (Lepomis macrochirus (Bluegill sunfish)): 9.6 µg/l Exposure time: 96 h</p> <p>LC50 (Ictalurus punctatus (channel catfish)): 24 µg/l Exposure time: 96 h</p> <p>LC50 (Cyprinus carpio (Carp)): 42 µg/l Exposure time: 96 h</p> <p>LC50 (Cyprinodon variegatus (sheepshead minnow)): 15 µg/l Exposure time: 96 h</p>	<p>Toxicity to daphnia and other aquatic invertebrates</p> <p>EC50 (Americamysis): 0.022 µg/l Exposure time: 96 h</p> <p>EC50 (Daphnia magna (Water flea)): 0.34 µg/l Exposure time: 48 h</p>
<p>Toxicity to algae/aquatic plants</p> <p>EC50 (Pseudokirchneriella subcapitata (green algae)): 100 mg/l Exposure time: 72 h</p>	
<p>M-Factor (Acute aquatic toxicity)</p> <p>Toxicity to fish (Chronic toxicity)</p>	<p>10,000</p> <p>NOEC (Pimephales promelas (fathead minnow)): 0.52 µg/l Exposure time: 32 d</p>
<p>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</p>	<p>NOEC (Daphnia magna (Water flea)): 0.03 µg/l Exposure time: 21 d</p> <p>NOEC (Mysidopsis bahia (opossum shrimp)): 0.0035 µg/l Exposure time: 28 d</p>
<p>M-Factor (Chronic aquatic toxicity)</p> <p>Toxicity to microorganisms</p>	<p>10,000</p> <p>EC50: > 1,000 mg/l Exposure time: 3 h Test Type: Respiration inhibition</p>

Persistence and degradability

Components:

1,3-Dioxan-5-ol:

Biodegradability	: Result: Inherently biodegradable. Remarks: Based on data from similar materials
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Butanone:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 98 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Stability in water : Hydrolysis: 50 %(< 12 h)

Bioaccumulative potential**Components:****1,3-Dioxan-5-ol:**

Partition coefficient: n- : log Pow: -0.65
octanol/water

Butanone:

Partition coefficient: n- : log Pow: 0.3
octanol/water

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 52

Partition coefficient: n- : log Pow: 4
octanol/water

Mobility in soil**Components:****abamectin (combination of avermectin B1a and avermectin B1b) (ISO):**

Distribution among environ- : log Koc: > 3.6
mental compartments

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Do not dispose of waste into sewer.
Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Empty containers retain residue and can be dangerous.
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.

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If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Butanone)
Class	:	3
Packing group	:	II
Labels	:	3
Environmentally hazardous	:	no

IATA-DGR

UN/ID No.	:	UN 1993
Proper shipping name	:	Flammable liquid, n.o.s. (Butanone)
Class	:	3
Packing group	:	II
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	364
Packing instruction (passenger aircraft)	:	353

IMDG-Code

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Butanone, abamectin (combination of avermectin B1a and avermectin B1b) (ISO))
Class	:	3
Packing group	:	II
Labels	:	3
EmS Code	:	F-E, <u>S-E</u>
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

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

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Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and : Not applicable
Environmental Protection and Management (Hazardous Substances) Regulations

Fire Safety (Petroleum and Flammable Materials) : Dioxane
Regulations : Methyl Ethyl Ketone

The components of this product are reported in the following inventories:

AICS : not determined
DSL : not determined
IECSC : not determined

16. OTHER INFORMATION

Revision Date : 30.09.2023

Further information

Sources of key data used to : Internal technical data, data from raw material SDSs, OECD
compile the Safety Data eChem Portal search results and European Chemicals Agen-
Sheet cy, <http://echa.europa.eu/>

Date format : dd.mm.yyyy

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
SG OEL : Singapore. Workplace Safety and Health (General Provisions)
Regulations - First Schedule Permissible Exposure Limits of
Toxic Substances.

ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
SG OEL / PEL (long term) : Permissible Exposure Level (PEL) Long Term
SG OEL / PEL (short term) : Permissible Exposure Level (PEL) Short Term

AllC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and

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Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

SG / EN