HELIX VIBRANCE

Version	Revision Date:	SDS Number:	Date of last issue: 12/16/2022
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SECTION 1. IDENTIFICATION

Product name : HELIX VIBRANCE
Design code : A20477A

Product Registration number : 100-1528

Manufacturer or supplier's details

Company name of supplier : Syngenta Crop Protection, LLC
Address : Post Office Box 18300
Greensboro NC 27419
United States of America (USA)

Telephone : 1 800 334 9481
Telefax : 1 336 632 2192

E-mail address : sds.requests@syngenta.com
Emergency telephone : 1 800 888 8372

Recommended use of the chemical and restrictions on use

Recommended use : Insecticide

Restrictions on use : General Use Pesticide

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied

Not a hazardous substance or mixture.

Other hazards

None known.

GHS label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
thiamethoxam (ISO)	153719-23-4*	20.71	-
propane-1,2,3-triol	56-81-5*	>= 10 - <= 30	TSC

titanium dioxide	13463-67-7*	>= 7 - <= 13	TSC
tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine	147-14-8*	>= 1 - <= 5	TSC
lignosulfonic acid, ethoxylated, sodium salts	68611-14-3*	>= 1 - <= 5	TSC
difenoconazole (ISO)	119446-68-3*	1.2501	-
metalaxyl-M (ISO)	70630-17-0*	0.3973	-
sedaxane	874967-67-6*	0.26	-
fludioxonil (ISO)	131341-86-1*	0.1324	-
triethylamine	121-44-8*	<= 0.1	TSC

* Indicates that the identifier is a CAS No.
TSC- the actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

If inhaled : Take the victim into fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control center immediately.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.

If swallowed : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed : Nonspecific
No symptoms known or expected.

Notes to physician : There is no specific antidote available.
Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

Specific hazards during fire fighting : As the product contains combustible organic ingredients, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NOx)
Chlorine compounds
Sulfur oxides
Fluorine compounds

Further information : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

Special protective equipment for fire-fighters : Wear full protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Clean contaminated surface thoroughly.
Clean with detergents. Avoid solvents.
Retain and dispose of contaminated wash water.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : No special protective measures against fire required.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.

		For personal protection see section 8.
Conditions for safe storage	:	No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
thiamethoxam (ISO)	153719-23-4	TWA	5 mg/m3	Syngenta
propane-1,2,3-triol	56-81-5	TWA (mist, respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (mist, total dust)	15 mg/m3	OSHA Z-1
		TWA (Mist - total dust)	10 mg/m3	OSHA P0
		TWA (Mist - respirable fraction)	5 mg/m3	OSHA P0
titanium dioxide	13463-67-7	TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (Respirable particulate matter)	2.5 mg/m3 (Titanium dioxide)	ACGIH
tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine	147-14-8	TWA	1 mg/m3 (Copper)	NIOSH REL
difenoconazole (ISO)	119446-68-3	TWA	5 mg/m3	Syngenta
metalaxyl-M (ISO)	70630-17-0	TWA	5 mg/m3	Syngenta
sedaxane	874967-67-6	TWA	5 mg/m3	Syngenta
fludioxonil (ISO)	131341-86-1	TWA	5 mg/m3	Syngenta
		TWA (Inhalable particulate matter)	1 mg/m3	ACGIH
triethylamine	121-44-8	TWA	0.5 ppm	ACGIH
		STEL	1 ppm	ACGIH
		TWA	25 ppm 100 mg/m3	OSHA Z-1
		STEL	15 ppm 60 mg/m3	OSHA P0
		TWA	10 ppm 40 mg/m3	OSHA P0

Engineering measures	:	THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED

FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.
Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection

Remarks : Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things from the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection : No special protective equipment required.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Remove and wash contaminated clothing before re-use.
Wear as appropriate:
Impervious clothing

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	blue
Odor	:	aromatic
Odor Threshold	:	No data available
pH	:	6.8 Concentration: 1 %w/v
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	Method: Pensky-Martens closed cup does not flash
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Density	:	1.3 g/cm3 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	743 °F / 395 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	750 mPa.s (68 °F / 20 °C)
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive

Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle characteristics		
Particle size	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	None reasonably foreseeable.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	No decomposition if used as directed.
Incompatible materials	:	None known.
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion
Inhalation
Skin contact
Eye contact

Acute toxicity

Based on available data, the classification criteria are not met.

Product:

Acute oral toxicity	:	LD50 (Rat, female): 3,129 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 2.55 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg

Components:

thiamethoxam (ISO):

Acute oral toxicity	:	LD50 (Rat, male and female): 1,563 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 3.72 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal

toxicity

propane-1,2,3-triol:

Acute oral toxicity : LD50 (Rat, female): > 4,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male): > 2.75 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity

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

tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine:

Acute oral toxicity : LD50 Oral: Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on data from similar materials

difenoconazole (ISO):

Acute oral toxicity : LD50 (Rat, male and female): 1,453 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 3.3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,010 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

metalaxyl-M (ISO):

Acute oral toxicity : LD50 (Rat, female): 375 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 2.29 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Highest attainable concentration

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

sedaxane:

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.244 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

fludioxonil (ISO):

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 2.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

triethylamine:

Acute oral toxicity : Assessment: The component/mixture is toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat): 7.22 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rabbit, male): 580 mg/kg

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

Species : Rabbit
Result : No skin irritation

Components:

thiamethoxam (ISO):

Species : Rabbit
Result : No skin irritation

propane-1,2,3-triol:

Species : Rabbit
Result : No skin irritation

tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine:

Result : No skin irritation

Remarks : Based on data from similar materials

lignosulfonic acid, ethoxylated, sodium salts:

Result : Irritating to skin.

difenoconazole (ISO):

Species : Rabbit
Result : No skin irritation

metalaxyl-M (ISO):

Species : Rabbit
Result : No skin irritation

sedaxane:

Species : Rabbit
Result : No skin irritation

fludioxonil (ISO):

Species : Rabbit
Result : No skin irritation

triethylamine:

Species : Rabbit
Result : Corrosive after 3 minutes or less of exposure

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Product:

Species : Rabbit
Result : No eye irritation

Components:

thiamethoxam (ISO):

Species : Rabbit
Result : No eye irritation

propane-1,2,3-triol:

Species : Rabbit
Result : No eye irritation

tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine:

Result : No eye irritation
Remarks : Based on data from similar materials

lignosulfonic acid, ethoxylated, sodium salts:

Result : Eye irritation

difenoconazole (ISO):

Species : Rabbit
Result : Irritation to eyes, reversing within 7 days

metalaxyl-M (ISO):

Species : Rabbit
Result : Risk of serious damage to eyes.

sedaxane:

Species : Rabbit
Result : No eye irritation

fludioxonil (ISO):

Species : Rabbit
Result : No eye irritation

triethylamine:

Species : Rabbit
Result : Irreversible effects on the eye

Respiratory or skin sensitization

Skin sensitization

Based on available data, the classification criteria are not met.

Respiratory sensitization

Not classified due to lack of data.

Product:

Test Type : Local lymph node assay (LLNA)
Species : Mouse
Result : Does not cause skin sensitization.

Components:

thiamethoxam (ISO):

Species : Guinea pig
Result : Does not cause skin sensitization.

propane-1,2,3-triol:

Species : Guinea pig
Result : Not a skin sensitizer.

tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine:

Result : Does not cause skin sensitization.

difenoconazole (ISO):

Species	:	Guinea pig
Result	:	Does not cause skin sensitization.

metalaxyl-M (ISO):

Species	:	Guinea pig
Result	:	Does not cause skin sensitization.

sedaxane:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Result	:	Not a skin sensitizer.

fludioxonil (ISO):

Species	:	Guinea pig
Result	:	Does not cause skin sensitization.

triethylamine:

Result	:	Did not cause sensitization on laboratory animals.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

thiamethoxam (ISO):

Germ cell mutagenicity - Assessment	:	Animal testing did not show any mutagenic effects.

propane-1,2,3-triol:

Germ cell mutagenicity - Assessment	:	In vitro tests did not show mutagenic effects

tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine:

Germ cell mutagenicity - Assessment	:	Not mutagenic in Ames Test., Based on data from similar materials

difenoconazole (ISO):

Germ cell mutagenicity - Assessment	:	Animal testing did not show any mutagenic effects.

metalaxyl-M (ISO):

Germ cell mutagenicity - Assessment	:	Animal testing did not show any mutagenic effects.

sedaxane:

Germ cell mutagenicity - Assessment	:	Animal testing did not show any mutagenic effects.

fludioxonil (ISO):

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

triethylamine:

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Carcinogenicity

Not classified due to lack of data.

Components:

thiamethoxam (ISO):

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

propane-1,2,3-triol:

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

titanium dioxide:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Based on the results of chronic inhalation studies (with positive results only in a single species - rat), IARC has concluded that: "There is inadequate evidence in humans for the carcinogenicity of titanium dioxide." but that: "There is sufficient evidence in experimental animals for carcinogenicity of titanium dioxide".
IARCs overall evaluation was that "titanium dioxide is possibly carcinogenic to humans (Group 2B)."

Our supplier has examined all of the available animal carcinogenicity and mechanistic data together with workplace epidemiology data for titanium dioxide and concludes that the weight of scientific evidence indicates that there is no causative link between titanium dioxide exposure and cancer risk in humans and that workplace exposures in compliance with applicable exposure standards will not result in lung cancer or chronic respiratory diseases in humans.

difenoconazole (ISO):

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

metalaxyl-M (ISO):

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

sedaxane:

Carcinogenicity - Assess- : Weight of evidence does not support classification as a car-

ment

cinogen, At extremely high doses, numerically higher incidences of uterine, thyroid and liver tumors (male and/or female rats) and liver tumors (male mice) were within the range of normal background variation and thus considered unrelated to treatment. Some Regulatory Authorities have taken a more conservative position that these high-dose findings are treatment-related in rats and mice. The dose levels where these findings occur are not relevant to human exposure levels.

fludioxonil (ISO):

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

triethylamine:

Carcinogenicity - Assessment : No data available

Reproductive toxicity

Not classified due to lack of data.

Components:

thiamethoxam (ISO):

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

No effects on or via lactation

propane-1,2,3-triol:

Reproductive toxicity - Assessment : No toxicity to reproduction, No effects on or via lactation

difenoconazole (ISO):

Reproductive toxicity - Assessment : No toxicity to reproduction

metalaxyl-M (ISO):

Reproductive toxicity - Assessment : No toxicity to reproduction

sedaxane:

Reproductive toxicity - Assessment : No toxicity to reproduction

fludioxonil (ISO):

Reproductive toxicity - Assessment : No toxicity to reproduction

No effects on or via lactation

triethylamine:

Reproductive toxicity - Assessment : No toxicity to reproduction, Information given is based on data obtained from similar substances.

No effects on or via lactation

STOT-single exposure

Not classified due to lack of data.

Components:

thiamethoxam (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

lignosulfonic acid, ethoxylated, sodium salts:

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

difenoconazole (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

fludioxonil (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

triethylamine:

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT-repeated exposure

Not classified due to lack of data.

Components:

thiamethoxam (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

propane-1,2,3-triol:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

difenoconazole (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

metalaxyl-M (ISO):

Assessment : The substance or mixture is not classified as specific target

organ toxicant, single exposure.

sedaxane:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

fludioxonil (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

triethylamine:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration toxicity

Not classified due to lack of data.

Components:

thiamethoxam (ISO):

No aspiration toxicity classification

fludioxonil (ISO):

No aspiration toxicity classification

triethylamine:

No aspiration toxicity classification

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

thiamethoxam (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

EC50 (Cloeon sp.): 0.014 mg/l
Exposure time: 48 h

EC50 (Chironomus riparius (harlequin fly)): 0.035 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): > 81.8 mg/l

Exposure time: 72 h

NOEC (Raphidocelis subcapitata (freshwater green alga)): 81.8 mg/l
End point: Growth rate
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 28 d
Test Type: flow-through test

NOEC (Oncorhynchus mykiss (rainbow trout)): > 20 mg/l
Exposure time: 88 d
Test Type: Early-life Stage

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 100 mg/l
Exposure time: 21 d

NOEC (Chironomus riparius (Midge larvae)): 0.01 mg/l
Exposure time: 30 d

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
Exposure time: 3 h

tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine:

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

difenoconazole (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.1 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.77 mg/l
Exposure time: 48 h

EC50 (Americamysis): 0.15 mg/l
Exposure time: 96 h

Toxicity to algae/aquatic plants : EC10 (Navicula pelliculosa (Freshwater diatom)): 0.0697 mg/l
End point: Growth rate
Exposure time: 72 h

ErC50 (Desmodesmus subspicatus (green algae)): 0.0876 mg/l
Exposure time: 72 h

EC10 (Desmodesmus subspicatus (green algae)): 0.015 mg/l
End point: Growth rate
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : EC10 (Pimephales promelas (fathead minnow)): 0.01298 mg/l
Exposure time: 34 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC10 (Daphnia magna (Water flea)): 0.0078 mg/l Exposure time: 21 d EC10 (Americamysis): 0.00572 mg/l Exposure time: 28 d
Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h

metalaxyl-M (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h LC50 (Cyprinus carpio (Carp)): > 100 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 271 mg/l Exposure time: 96 h NOEC (Raphidocelis subcapitata (freshwater green alga)): 19.7 mg/l End point: Growth rate Exposure time: 96 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 50 mg/l Exposure time: 28 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 25 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h

sedaxane:

Toxicity to fish	:	LC50 (Cyprinus carpio (Carp)): 0.62 mg/l Exposure time: 96 h LC50 (Pimephales promelas (fathead minnow)): 0.98 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 6.10 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 3 mg/l Exposure time: 96 h NOEC (Raphidocelis subcapitata (freshwater green alga)): 1

mg/l
End point: Growth rate
Exposure time: 96 h

ErC50 (Lemna gibba (gibbous duckweed)): 6.5 mg/l
Exposure time: 7 d

EC10 (Lemna gibba (gibbous duckweed)): 2.398 mg/l
End point: Growth rate
Exposure time: 7 d

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.165 mg/l
Exposure time: 33 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 0.711 mg/l
Exposure time: 21 d

fludioxonil (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.23 mg/l
Exposure time: 96 h

LC50 (Pimephales promelas (fathead minnow)): 0.7 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.4 mg/l
Exposure time: 48 h

EC50 (Americamysis): 0.27 mg/l
Exposure time: 96 h

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): 0.259 mg/l
Exposure time: 96 h

EC10 (Raphidocelis subcapitata (freshwater green alga)): 0.077 mg/l
End point: Growth rate
Exposure time: 96 h

ErC50 (Skeletonema costatum (marine diatom)): 0.43 mg/l
Exposure time: 96 h

NOEC (Skeletonema costatum (marine diatom)): 0.14 mg/l
End point: Growth rate
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.04 mg/l
Exposure time: 28 d

EC10 (Pimephales promelas (fathead minnow)): 0.018 mg/l
Exposure time: 116 d

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.035 mg/l

aquatic invertebrates (Chronic toxicity)		Exposure time: 21 d NOEC (Americamysis): 0.018 mg/l Exposure time: 28 d
Toxicity to microorganisms	:	EC50 (activated sludge): > 1,000 mg/l Exposure time: 3 h

triethylamine:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 36 mg/l Exposure time: 96 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 9.8 mg/l Exposure time: 72 h

Persistence and degradability

Components:

thiamethoxam (ISO):

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Degradation half life: 11 d Remarks: Product is not persistent.

tetrabenzo-5,10,15,20-diazaporphyrinephthalocyanine:

Biodegradability	:	Result: Not readily biodegradable.

difenoconazole (ISO):

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Degradation half life: 1 d Remarks: Product is not persistent.

metalaxyl-M (ISO):

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Degradation half life: 22.4 - 47.5 d Remarks: Product is not persistent.

sedaxane:

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Degradation half life: > 1 yr Remarks: Persistent in water.

fludioxonil (ISO):

Biodegradability	:	Result: Not readily biodegradable.

Stability in water : Remarks: Persistent in water.

triethylamine:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

Components:

thiamethoxam (ISO):

Bioaccumulation : Remarks: Low bioaccumulation potential.

Partition coefficient: n-octanol/water : log Pow: -0.13 (77 °F / 25 °C)

difenoconazole (ISO):

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 4.4 (77 °F / 25 °C)

metalaxyl-M (ISO):

Bioaccumulation : Remarks: Low bioaccumulation potential.

Partition coefficient: n-octanol/water : log Pow: 1.71 (77 °F / 25 °C)

sedaxane:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.3 (77 °F / 25 °C)

fludioxonil (ISO):

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 4.12 (77 °F / 25 °C)

Mobility in soil

Components:

thiamethoxam (ISO):

Distribution among environmental compartments : Remarks: Moderately mobile in soils

Stability in soil : Dissipation time: 51 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

difenoconazole (ISO):

Distribution among environmental compartments : Remarks: Slightly mobile in soils

Stability in soil : Dissipation time: 122 d

Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

metalaxyl-M (ISO):

Distribution among environmental compartments : Remarks: Highly mobile in soils

Stability in soil : Dissipation time: < 50 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

sedaxane:

Distribution among environmental compartments : Remarks: Moderately mobile in soils

Stability in soil : Dissipation time: 83 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

fludioxonil (ISO):

Distribution among environmental compartments : Remarks: immobile

Stability in soil : Dissipation time: 25.9 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

Other adverse effects

Components:

thiamethoxam (ISO):

Results of PBT and vPvB assessment : Not persistent, bioaccumulative, and toxic (PBT).

difenoconazole (ISO):

Results of PBT and vPvB assessment : Not persistent, bioaccumulative, and toxic (PBT).

Endocrine disrupting potential : Does not have endocrine disrupting properties.

metalaxyl-M (ISO):

Results of PBT and vPvB assessment : Not persistent, bioaccumulative, and toxic (PBT).
Remarks: Weight of evidence

Endocrine disrupting potential : Does not have endocrine disrupting properties.
Remarks: Weight of evidence

sedaxane:

Results of PBT and vPvB assessment : Not persistent, bioaccumulative, and toxic (PBT).

fludioxonil (ISO):

Results of PBT and vPvB assessment : Not persistent, bioaccumulative, and toxic (PBT).

Endocrine disrupting potential : Does not have endocrine disrupting properties.

triethylamine:

Results of PBT and vPvB assessment	:	Not persistent, bioaccumulative, and toxic (PBT).

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. This product will not be classified as a RCRA characteristic hazardous waste when discarded.
Contaminated packaging	:	Empty remaining contents. Triple rinse containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIAMETHOXAM, DIFENOCONAZOLE)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	yes
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (THIAMETHOXAM, DIFENOCONAZOLE)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964
Environmentally hazardous	:	yes
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a

net mass of 5 kg or less for solids.

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIAMETHOXAM, DIFENOCONAZOLE)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes
Remarks	:	This product can be subject to exemptions when packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5 kg or less for solids.

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Domestic regulation

49 CFR

Not regulated as a dangerous good

Remarks	:	Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

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.

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:
Caution
Harmful if swallowed.
Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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

TCSI	:	Not in compliance with the inventory
TSCA	:	On or in compliance with the active portion of the TSCA inventory
AIIC	:	Not in compliance with the inventory
CA. DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. sedaxane thiamethoxam (ISO) difenoconazole (ISO) metalaxyl-M (ISO) fludioxonil (ISO) poly(oxy-1,2-ethanediyl), alpha-phosphono-omega-[2,4,6-tris(1-phenylethyl)phenoxy]-
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

TSCA list

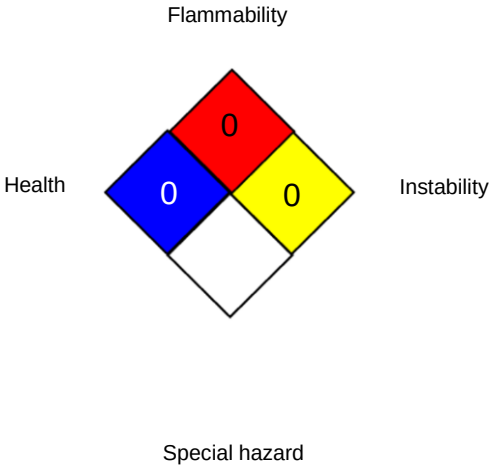
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

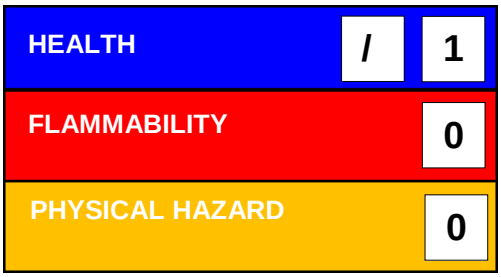
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Syngenta	:	Syngenta Occupational Exposure Limits
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average
Syngenta / TWA	:	Time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardization; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and 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 Organization 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - 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

Revision Date : 06/09/2026

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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