SAFETY DATA SHEET

F4092-3

Version	Revision Date:	SDS Number:	Date of last issue: 08/01/2023
1.2	08/01/2023	50002833	Date of first issue: 10/11/2021

SECTION 1. IDENTIFICATION

Product identifier
Product name F4092-3

Other means of identification
Product code 50002833

Recommended use of the chemical and restrictions on use
Recommended use Insecticide and fungicide

Restrictions on use Use as recommended by the label.

Details of the supplier of the safety data sheet
Manufacturer

FMC Corporation
2929 WALNUT ST
PHILADELPHIA PA 19104
USA
(215) 299-6000
SDS-Info@fmc.com

Emergency telephone

For leak, fire, spill or accident emergencies, call:
1 800 / 424-9300 (CHEMTREC - U.S.A.)
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

Medical emergency:
U.S.A. & Canada: +1 800 / 331-3148
All other countries: +1 651 / 632-6793 (Collect)

SECTION 2. HAZARDS IDENTIFICATION

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

Acute toxicity (Oral)	:	Category 4
Acute toxicity (Inhalation)	:	Category 4
Skin irritation	:	Category 2
Skin sensitization	:	Category 1
Specific target organ toxicity - repeated exposure	:	Category 1 (Nervous system)
Specific target organ toxicity - repeated exposure	:	Category 2 (Respiratory system)

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H302 + H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H372 Causes damage to organs (Nervous system) through prolonged or repeated exposure.
H373 May cause damage to organs (Respiratory system) through prolonged or repeated exposure.

Precautionary Statements :

Prevention:

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water and soap.
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.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Bifenthrin	82657-04-3	15.7
D-Glucopyranose, oligomeric, C9-11-alkyl glycosides	132778-08-6	>= 1 - < 5
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt	68186-36-7	>= 1 - < 5
Spent earth	8031-18-3	>= 1 - < 5
acetic acid	64-19-7	>= 1 - < 5
tetrasodium pyrophosphate	7722-88-5	>= 0.1 - < 1

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	:	If on skin, rinse well with water.
In case of eye contact	:	Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	Harmful if swallowed or if inhaled. Causes skin and eye irritation. May cause an allergic skin reaction. Causes damage to organs through prolonged or repeated exposure.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire	:	Do not allow run-off from fire fighting to enter drains or water

fighting		courses.
Hazardous combustion products	:	Thermal decomposition can lead to release of irritating gases and vapors. Halogenated compounds Carbon oxides
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Never return spills in original containers for re-use. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene. For disposal considerations see section 13.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated

place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
acetic acid	64-19-7	TWA	10 ppm	ACGIH
		STEL	15 ppm	ACGIH
		TWA	10 ppm 25 mg/m3	NIOSH REL
		ST	15 ppm 37 mg/m3	NIOSH REL
		TWA	10 ppm 25 mg/m3	OSHA Z-1
		TWA	10 ppm 25 mg/m3	OSHA P0
tetrasodium pyrophosphate	7722-88-5	TWA	5 mg/m3	NIOSH REL
		TWA	5 mg/m3	OSHA P0

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Protective measures : Plan first aid action before beginning work with this product.
Always have on hand a first-aid kit, together with proper instructions.
Ensure that eye flushing systems and safety showers are located close to the working place.
Wear suitable protective equipment.

Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	liquid
Form	:	suspension
Color	:	light brown
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	5.97 (68 °F / 20 °C) (1% solution in water)
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	> 212 °F / > 100 °C
Evaporation rate	:	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
Relative density	:	1.16
Density	:	1.16 g/cm3
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	dispersible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available

Viscosity
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Explosive properties : Not explosive

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

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : No decomposition if stored and applied as directed.

Conditions to avoid : No data available

Incompatible materials : No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity : LD50 Oral (Rat): ca. 748.8 mg/kg
Method: OPPTS 870.1100
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 2.04 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: US EPA Test Guideline OPPTS 870.1300
GLP: yes

Acute dermal toxicity : LD50 Dermal (Not tested on animals): > 5,000 mg/kg
Method: OPPTS 870.1200
Remarks: Expert judgment

Skin corrosion/irritation

Causes skin irritation.

Product:

Method : OPPTS 870.2500
Result : Moderate skin irritation

Remarks : May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Causes eye irritation.

Product:

Species	:	Rabbit
Result	:	Mild eye irritation
Assessment	:	Not classified as irritant
Method	:	US EPA Test Guideline OPPTS 870.2400
GLP	:	yes

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Product:

Test Type	:	Local lymph node assay (LLNA)
Species	:	mice
Assessment	:	Skin sensitization
Method	:	OPPTS 870.2600
Result	:	Causes skin sensitization.
GLP	:	yes
Remarks	:	Causes sensitization.

Germ cell mutagenicity

Not classified based on available information.

Components:

Bifenthrin:

Genotoxicity in vitro	:	Test Type: gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Mouse lymphoma assay Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo	:	Test Type: Sex-linked Recessive Lethal Test Species: Drosophila melanogaster (vinegar fly)

Result: negative

Test Type: unscheduled DNA synthesis assay
Species: Rat
Method: OECD Test Guideline 486
Result: negative

acetic acid:

Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

tetrasodium pyrophosphate:

Genotoxicity in vitro	:	Test Type: Micronucleus test Test system: Human lymphocytes Method: OECD Test Guideline 487 Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells Method: OECD Test Guideline 490 Result: negative
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Not classified based on available information.

Components:

Bifenthrin:

Species	:	Rat, female
Application Route	:	Oral
Exposure time	:	2 Years
NOAEL	:	3 mg/kg bw/day
Result	:	negative
Species	:	Mouse, male
Application Route	:	Oral
Exposure time	:	18 month(s)
NOAEL	:	7.6 mg/kg bw/day
Result	:	positive
Symptoms	:	malignant tumors

acetic acid:

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

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is

on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:

Bifenthrin:

Effects on fertility : Test Type: Two-generation study
Species: Rat
Application Route: Oral
General Toxicity Parent: NOAEL: 3 mg/kg bw/day
General Toxicity F1: NOAEL: 5 mg/kg bw/day
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: 2.7 mg/kg bw/day
Teratogenicity: NOAEL: 2.7 mg/kg bw/day
Symptoms: Maternal effects.
Result: No teratogenic effects.

Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 1 mg/kg bw/day
Teratogenicity: NOAEL: 2 mg/kg bw/day
Result: No teratogenic effects.

Species: Rat
Application Route: Oral
General Toxicity Maternal: LOAEL: 7.2 mg/kg bw/day
Developmental Toxicity: LOAEL: 7.2 mg/kg bw/day
Embryo-fetal toxicity.: NOEL: 9.0 mg/kg bw/day
Method: OECD Test Guideline 426
Result: Animal testing did not show any effects on fertility., Some evidence of adverse effects on development, based on animal experiments.

acetic acid:

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

tetrasodium pyrophosphate:

Effects on fetal development : Test Type: Pre-natal
Species: Rat
Application Route: Oral
Dose: 1.38, 6.41, 29.7 and 138.0 mg

Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: > 138 mg/kg body weight
Embryo-fetal toxicity.: NOAEL: > 138 mg/kg body weight
Result: negative

Test Type: reproductive and developmental toxicity study
Species: Mouse
Application Route: Oral
Dose: 1.3, 6.0, 28.0 and 130.0 mg/k
Duration of Single Treatment: 17 d
General Toxicity Maternal: NOAEL: > 130 mg/kg body weight
Embryo-fetal toxicity.: NOAEL: > 130 mg/kg body weight
Result: negative

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

STOT-single exposure

Not classified based on available information.

Components:

Bifenthrin:

Target Organs : Central nervous system
Assessment : Causes damage to organs.

STOT-repeated exposure

Causes damage to organs (Nervous system) through prolonged or repeated exposure.
May cause damage to organs (Respiratory system) through prolonged or repeated exposure.

Components:

Bifenthrin:

Target Organs : Central nervous system
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

tetrasodium pyrophosphate:

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

Repeated dose toxicity

Components:

Bifenthrin:

Species : Rat, male and female
NOEL : 100 ppm
Application Route : Oral - feed
Exposure time : 90 d
Remarks : No toxicologically significant effects were found.

Species	:	Dog, male and female
NOEL	:	2.5 mg/kg bw/day
Application Route	:	Oral - feed
Exposure time	:	13 w
Symptoms	:	Tremors

tetrasodium pyrophosphate:

Species	:	Rat, male and female
NOAEL	:	500 mg/kg
LOAEL	:	1,000 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Dose	:	250, 500, 1000 mg/kg bw
Method	:	OECD Test Guideline 408
Target Organs	:	Blood, Kidney
Symptoms	:	Changes in the blood count

Aspiration toxicity

Not classified based on available information.

Components:

Bifenthrin:

The substance does not have properties associated with aspiration hazard potential.

Experience with human exposure

Components:

acetic acid:

General Information	:	Symptoms: corrosive effects
Inhalation	:	Target Organs: Respiratory Tract Symptoms: corrosive effects
Skin contact	:	Target Organs: Mucous membranes Symptoms: corrosive effects Target Organs: Skin Symptoms: corrosive effects
Eye contact	:	Target Organs: Eyes Symptoms: corrosive effects
Ingestion	:	Target Organs: Gastrointestinal tract Symptoms: corrosive effects

Further information

Product:

Remarks	:	No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Bifenthrin:

Toxicity to fish	:	LC50 (Salmo gairdneri): 0.00015 mg/l Exposure time: 96 h Test Type: flow-through test LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00035 mg/l Exposure time: 96 h Test Type: flow-through test LC50 (Oncorhynchus mykiss (rainbow trout)): 0.000256 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes LC50 (Pimephales promelas (fathead minnow)): 0.000234 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia): 0.00011 mg/l Exposure time: 48 h LC50 (Daphnia): 0.0016 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (algae): 0.822 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0.00012 mg/l Exposure time: 21 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.0013 µg/l Exposure time: 21 d NOEC (Daphnia magna (Water flea)): 0.00095 µg/l Exposure time: 21 d
Toxicity to soil dwelling organisms	:	LD50 (Eisenia fetida (earthworms)): > 16 mg/kg Exposure time: 14 d Method: OECD Test Guideline 216 Remarks: No significant adverse effect on Nitrogen minerali-

zation.

Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): 1,800 mg/kg

LD50 (Anas platyrhynchos (Mallard duck)): > 2,150 mg/kg

LD50 (Apis mellifera (bees)): 0.1 - 0.35 µg/bee
Exposure time: 24 h
End point: Acute oral toxicity
Method: OECD Test Guideline 213

LD50 (Apis mellifera (bees)): 0.1 - 0.3 µg/bee
Exposure time: 24 h
End point: Acute contact toxicity
Method: OECD Test Guideline 214

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 2.95 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Crustaceans): 26.2 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Skeletonema costatum (Diatom)): 9.05 mg/l
Exposure time: 72 h
Method: ISO 10253

Toxicity to microorganisms : EC50 (Pseudomonas putida): > 560 mg/l

Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt:

Ecotoxicology Assessment

Acute aquatic toxicity : Harmful to aquatic life.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Spent earth:

Ecotoxicology Assessment

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

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

acetic acid:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 300 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 300 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (marine diatom)): > 1,000 mg/l Exposure time: 72 h Method: ISO 10253 NOEC (Skeletonema costatum (marine diatom)): > 1,000 mg/l Exposure time: 72 h Method: ISO 10253
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 34.3 mg/l Exposure time: 21 d Method: OECD Test Guideline 204
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 31.4 mg/l End point: reproduction Exposure time: 21 d GLP: yes
Toxicity to microorganisms	:	NOEC (Pseudomonas putida): 850 mg/l Exposure time: 16 h

tetrasodium pyrophosphate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Test Type: static test
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 Remarks: Based on data from similar materials NOEC (Desmodesmus subspicatus (green algae)): 100 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	NOEC (activated sludge): 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials EC50 (activated sludge): 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials
Toxicity to soil dwelling or-	:	LC50 (Eisenia fetida (earthworms)): > 3,500 mg/kg

ganisms

Exposure time: 28 d
Method: OECD Test Guideline 207

Persistence and degradability

Components:

Bifenthrin:

Biodegradability : Result: Not readily biodegradable.

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

Biodegradability : Result: Readily biodegradable.

Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
Remarks: Based on data from similar materials

Spent earth:

Biodegradability : Result: Not readily biodegradable.

acetic acid:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

Components:

Bifenthrin:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 1,709
Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.
See section 9 for octanol-water partition coefficient.

Partition coefficient: n-octanol/water : log Pow: 6

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

Partition coefficient: n-octanol/water : log Pow: 3.7
Method: OECD Test Guideline 117

acetic acid:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 3.16

Partition coefficient: n-octanol/water : log Pow: -0.17 (68 °F / 20 °C)

Mobility in soil

Components:

Bifenthrin:

Distribution among environmental compartments	:	Koc: 236610 ml/g, log Koc: 5.37 Remarks: immobile
Stability in soil	:	

Other adverse effects

Product:

Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. 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. (Bifenthrin)
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bifenthrin)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

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

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	no

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

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
acetic acid	64-19-7	5000	

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 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Bifenthrin	82657-04-3	>= 10 - < 20 %
ammonium sulphate	7783-20-2	>= 5 - < 10 %

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

acetic acid	64-19-7	>= 1 - < 5 %

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

acetic acid	64-19-7	>= 1 - < 5 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

acetic acid	64-19-7	>= 1 - < 5 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307
This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

ammonium sulphate	7783-20-2
acetic acid	64-19-7
Quartz (SiO2)	14808-60-7

Pennsylvania Right To Know

water	7732-18-5
Bifenthrin	82657-04-3
ammonium sulphate	7783-20-2
D-Glucopyranose, oligomeric, C9-11-alkyl glycosides	132778-08-6
acetic acid	64-19-7

Maine Chemicals of High Concern

Quartz (SiO2)	14808-60-7
octamethylcyclotetrasiloxane [D4]	556-67-2

Vermont Chemicals of High Concern

octamethylcyclotetrasiloxane [D4]	556-67-2

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California Prop. 65

WARNING: This product can expose you to chemicals including Quartz (SiO2), which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances

acetic acid	64-19-7

California Permissible Exposure Limits for Chemical Contaminants

acetic acid	64-19-7

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

TCSI	:	Not in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. 2-METHYLBIPHENYL-3-YLMETHYL (Z)-(1RS,3RS)-3-(2-CHLORO-3,3,3-TRIFLUOROPROP-1-ENYL)-2,2-DIMETHYLCYCLOPROPANECARBOXYLATE Bacillus velezensis strain RTI301 Bacillus subtilis strain RTI477
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

TSCA list

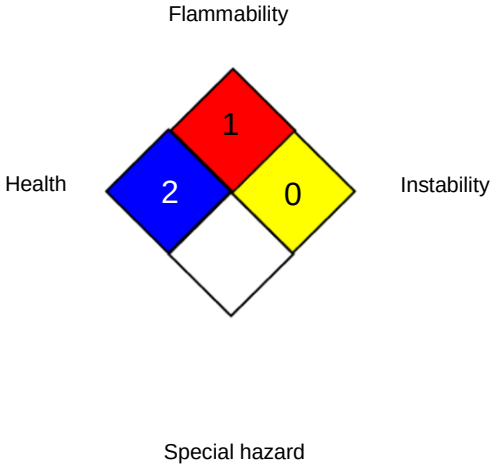
No substances are subject to a Significant New Use Rule.

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

SECTION 16. OTHER INFORMATION

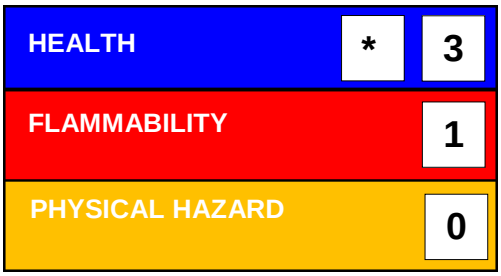
Further information

NFPA 704:



0 No health threat, **1** Slightly Hazardous, **2** Hazardous, **3** Extreme danger, **4** Deadly

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
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
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour 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 Standardisation; 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 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; 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, Authorisation 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

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Prepared by:

FMC Corporation

End of Material Safety Data Sheet