SAFETY DATA SHEET

Partner™ 40 DF

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	2023/10/27	50000493	Date of first issue: 2023/10/27

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Partner™ 40 DF

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

Restrictions on use : Use as recommended by the label.

Manufacturer or supplier's details

Company : FMC Agro Philippines, Inc.

Address : Unit 10-A Six/NEO Bldg.
5th Avenue cor. 26th Street,
1634 Bonifacio Global City, Taguig City
Philippines

Telephone : +63279443400

Telefax : +63279443465

E-mail address : SDS-Info@fmc.com

National Poison Control Center : U.P. PGH, Padre Faura, Manila (+63) 2 8524 1078
East Avenue, Quezon City (+63) 2 8928 0611
Southern Philippines Medical Center (+63) 82 227 2731
(formerly Davao Medical Center Davao City)

Emergency telephone : For leak, fire, spill or accident emergencies, call:
+(63) 2-395-3308 (CHEMTREC)
Toll-free mobile enabled: 1800 1 322 0553 (CHEMTREC)

Medical emergency:
All other countries: +1 651 / 632-6793 (Collect)

2. HAZARDS IDENTIFICATION

GHS Classification

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P273 Avoid release to the environment.

Response:

P391 Collect spillage.

Disposal:

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

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
carfentrazone-ethyl (ISO)	128639-02-1	>= 30 -< 50
Silicon dioxide	112926-00-8	>= 30 -< 50
D-Glucopyranose, oligomeric, decyl octyl glycosides	68515-73-1	>= 1 -< 3

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 : Remove to fresh air.
If unconscious, place in recovery position and seek medical advice.
Consult a physician after significant exposure.

In case of skin contact : If on clothes, remove clothes.
If on skin, rinse well with water.
Wash off with soap and plenty of water.
Get medical attention if irritation develops and persists.

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.
Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed : None known.

Notes to physician : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO2)
Dry chemical
Water spray
Regular foam

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Thermal decomposition can lead to release of irritating gases and vapors.
Nitrogen oxides (NOx)
Carbon oxides
Chlorine compounds
Fluorine compounds

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.
Use a water spray to cool fully closed containers.
Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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 : Firefighters should wear protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- : Evacuate personnel to safe areas.

tive equipment and emergency procedures		Use personal protective equipment. If it can be safely done, stop the leak. Do not touch or walk through the spilled material. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Avoid dust formation. Ensure adequate ventilation. 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.
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	:	Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection. Provide appropriate exhaust ventilation at places where dust is formed.
Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Avoid formation of respirable particles.
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 conditions	:	The product is stable under normal conditions of warehouse storage. Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.
Further information on storage stability	:	Keep in a dry place. No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Silicon dioxide	112926-00-8	TWA (Dust)	80 mg/m3 / %SiO2 (Silica)	PH OEL
		TWA (Dust)	20 Million particles per cubic foot (Silica)	PH OEL
carfentrazone-ethyl (ISO)	128639-02-1	TWA (Inhalable particulate matter)	1 mg/m3	ACGIH

Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Particulates type

Hand protection

Material : Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.

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 : Dust impervious protective suit
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.
Wear suitable protective equipment.
When using do not eat, drink or smoke.
In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

Hygiene measures : General industrial hygiene practice.
Avoid contact with skin, eyes and clothing.
Do not breathe dust or spray mist.
Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	solid
Color	:	Off-white/tan
Odor	:	Latex smell
Odor Threshold	:	not determined
pH	:	8.63 (23.9 °C) Concentration: 1 %
Melting point/freezing point	:	not determined
Boiling point/boiling range	:	not determined
Flash point	:	not determined
Evaporation rate	:	not determined
Flammability (solid, gas)	:	Not highly flammable
Self-ignition	:	not determined
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapor pressure	:	Not available for this mixture.
Relative vapor density	:	not determined
Density	:	0.716 g/cm3 Pour density 0.735 g/cm3 Tap density
Solubility(ies) Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	Not available for this mixture.
Autoignition temperature	:	No data available
Decomposition temperature	:	not determined

Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
Particle size	:	No data available

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. Dust may form explosive mixture in air.
Conditions to avoid	:	Avoid extreme temperatures. Avoid dust formation. Heat, flames and sparks. Protect from frost, heat and sunlight.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	:	Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	:	LD50 (Rat, female): > 5,000 mg/kg Method: OECD Test Guideline 425
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.18 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity Remarks: no mortality Highest attainable concentration.
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 402

Components:

carfentrazone-ethyl (ISO):

Acute oral toxicity : LD50 (Rat, female): 5,143 mg/kg
Method: FIFRA 81.01
Symptoms: Tremors
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.09 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: EPA OPP 81 - 3
Symptoms: Tremors, chromodacryorrhea, nasal discharge
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality

Acute dermal toxicity : LD50 (Rat, male and female): > 4,000 mg/kg
Method: US EPA Test Guideline OPP 81-2
Assessment: The component/mixture is minimally toxic after single contact with skin.
Remarks: no mortality

Silicon dioxide:

Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC0 (Rat, male and female): > 0.14 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Based on data from similar materials
no mortality

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Based on data from similar materials

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Acute oral toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 423

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : slight irritation

Components:

carfentrazone-ethyl (ISO):

Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	US EPA Test Guideline OPP 81-5
Result	:	No skin irritation

Silicon dioxide:

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

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	Minimal effects that do not meet the threshold for classification.

Components:

carfentrazone-ethyl (ISO):

Species	:	Rabbit
Result	:	slight irritation
Assessment	:	Not classified as irritant
Method	:	EPA OPP 81-4
GLP	:	yes

Silicon dioxide:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
Remarks	:	Based on data from similar materials

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Method	:	OECD Test Guideline 405
Remarks	:	Based on data from similar materials

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitization.

Components:

carfentrazone-ethyl (ISO):

Test Type	:	Local lymph node assay (LLNA)
Species	:	Guinea pig
Method	:	US EPA Test Guideline OPP 81-6
Result	:	Does not cause skin sensitization.

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.
Remarks	:	Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Components:

carfentrazone-ethyl (ISO):

Genotoxicity in vitro	:	Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse (male and female) Result: negative
Germ cell mutagenicity - Assessment	:	No genotoxic potential.

Silicon dioxide:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Species: Rat (male) Application Route: Inhalation Result: negative Remarks: Based on data from similar materials

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: negative Remarks: Based on data from similar materials Test Type: gene mutation test Method: OECD Test Guideline 476 Result: negative Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse (male) Application Route: Intraperitoneal injection Method: OECD Test Guideline 474 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:

carfentrazone-ethyl (ISO):

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	104 weeks
NOAEL	:	3 - 9 mg/kg bw/day
Result	:	negative
Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

Silicon dioxide:

Species	:	Rat
Application Route	:	Oral

Exposure time	:	103 weeks
Method	:	OECD Test Guideline 453
Result	:	negative
Remarks	:	Based on data from similar materials

Reproductive toxicity

Not classified based on available information.

Components:

carfentrazone-ethyl (ISO):

Effects on fertility	:	Test Type: Multi-generation study Species: Rat, male and female Application Route: Ingestion Fertility: NOEL: 4,000 ppm Result: negative
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat, female Application Route: Oral General Toxicity Maternal: NOEL: 100 mg/kg bw/day Embryo-fetal toxicity.: NOEL: 600 mg/kg bw/day Result: negative Test Type: Embryo-fetal development Species: Rabbit, female Application Route: Oral General Toxicity Maternal: NOEL: 150 mg/kg bw/day Embryo-fetal toxicity.: NOEL: > 300 mg/kg bw/day Result: negative
Reproductive toxicity - Assessment	:	Animal testing showed no reproductive toxicity.

Silicon dioxide:

Effects on fertility	:	Species: Rat General Toxicity Parent: NOAEL: 1.5 mg/kg bw/day Fertility: NOAEL: > 6.9 mg/kg body weight
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat Application Route: Oral General Toxicity Maternal: NOAEL: 2 mg/kg bw/day Embryo-fetal toxicity.: NOAEL: 2 mg/kg bw/day Symptoms: Reduced fetal weight., Reduced number of viable fetuses. Test Type: Embryo-fetal development Species: Rabbit Application Route: Oral General Toxicity Maternal: NOAEL: 500 mg/kg bw/day Embryo-fetal toxicity.: NOAEL: 500 mg/kg bw/day Symptoms: Reduced fetal weight., fused or incompletely ossified sternebrae

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Effects on fertility	:	Test Type: one-generation reproductive toxicity Species: Rat, male and female Application Route: Oral Dose: 0, 100, 300, 1000 mg/kg bw General Toxicity Parent: NOAEL: 1,000 mg/kg bw/day Method: OECD Test Guideline 421 Result: negative Remarks: Based on data from similar materials
Effects on fetal development	:	Species: Rat, females Application Route: Oral Dose: 0, 100, 300, 1000 mg/kg bw General Toxicity Maternal: NOAEL: 1,000 mg/kg bw/day Developmental Toxicity: NOAEL: 1,000 mg/kg bw/day Method: OECD Test Guideline 414 Result: negative Remarks: Based on data from similar materials
Reproductive toxicity - Assessment	:	Weight of evidence does not support classification for reproductive toxicity

STOT-single exposure

Not classified based on available information.

Components:

carfentrazone-ethyl (ISO):

Remarks	:	No significant adverse effects were reported

STOT-repeated exposure

Not classified based on available information.

Components:

carfentrazone-ethyl (ISO):

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

D-Glucopyranose, oligomeric, decyl octyl glycosides:

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

Repeated dose toxicity

Components:

carfentrazone-ethyl (ISO):

Species	:	Mouse, male and female
NOAEL	:	1000 ppm
LOAEL	:	4000 ppm
Application Route	:	Oral

Exposure time	:	90 days
Target Organs	:	Blood

Species	:	Dog, male and female
NOEL	:	150 mg/kg
LOAEL	:	500 mg/kg
Application Route	:	Oral
Exposure time	:	90 days
Target Organs	:	Blood

Species	:	Dog, male and female
NOEL	:	50 mg/kg
NOAEL	:	150 mg/kg
LOAEL	:	500 mg/kg
Application Route	:	Oral
Exposure time	:	12 months
GLP	:	yes
Target Organs	:	Blood

Silicon dioxide:

Species	:	Rat, male and female
NOAEL	:	2,500 mg/kg
Application Route	:	Oral
Exposure time	:	13 weeks
Method	:	OECD Test Guideline 408
Remarks	:	Based on data from similar materials

Species	:	Rat, male and female
NOAEL	:	1.3 - 10 mg/l
LOAEL	:	5.9 mg/l
Application Route	:	Inhalation
Exposure time	:	13 weeks
Method	:	OECD Test Guideline 413
Remarks	:	Based on data from similar materials

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Species	:	Rat, male and female
NOAEL	:	1000 mg/kg bw/day
Application Route	:	Oral
Exposure time	:	90d
Dose	:	0, 250, 500, 1000 mg/kg bw
Remarks	:	Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

Product:

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

Components:

carfentrazone-ethyl (ISO):
The substance does not have properties associated with aspiration hazard potential.

Neurological effects

Components:

carfentrazone-ethyl (ISO):
No neurotoxicity observed in animal studies.

Further information

Product:

Remarks	:	No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to algae/aquatic plants	:	NOEC (algae): 0.0063 mg/l Exposure time: 72 h ErC50 (algae): 0.067 mg/l Exposure time: 72 h NOEC (Lemna gibba (gibbous duckweed)): 0.00158 µg/l Exposure time: 7 d Method: OECD Test Guideline 221 EC50 (Lemna gibba (gibbous duckweed)): 0.030 µg/l Exposure time: 7 d Method: OECD Test Guideline 221
Toxicity to soil dwelling organisms	:	NOEC (Eisenia fetida (earthworms)): 45.9 mg/kg Method: OECD Test Guideline 222 LC50 (Eisenia fetida (earthworms)): > 45.9 mg/kg Method: OECD Test Guideline 222
Toxicity to terrestrial organisms	:	LD50 (Apis mellifera (bees)): > 200 µg/bee Exposure time: 48 h End point: Acute oral toxicity Method: OECD Test Guideline 213

Components:

carfentrazone-ethyl (ISO):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 2.55 mg/l

Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 9.8 mg/l
End point: Immobilization
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: No toxicity at the limit of solubility.

Toxicity to algae/aquatic plants : EC50 (Anabaena flos-aquae (cyanobacterium)): 0.012 mg/l
Exposure time: 72 h

NOEC (algae): 0.001 mg/l
Exposure time: 96 h

EC50 (Lemna gibba (gibbous duckweed)): 0.0057 mg/l
Exposure time: 14 d

EC50 (Selenastrum capricornutum (green algae)): 0.0133 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

NOEC (Selenastrum capricornutum (green algae)): 0.00933 mg/l
End point: Growth rate
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 22 µg/l
Exposure time: 89 d
Test Type: Early Life-Stage
Method: OECD Test Guideline 210
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia): 35 mg/l
End point: reproduction
Exposure time: 21 d
Method: US EPA Test Guideline OPPTS 850.1300
Remarks: Information given is based on data obtained from similar product.

M-Factor (Chronic aquatic toxicity) : 100

Toxicity to microorganisms : NOEC (activated sludge): 1,000 mg/l
Test Type: Respiration inhibition
Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms	:	NOEC (Eisenia fetida (earthworms)): 820 mg/kg Method: OECD Test Guideline 216 Remarks: No significant adverse effect on Nitrogen mineralization. Method: OECD Test Guideline 217 Remarks: No significant adverse effect on Carbon mineralization.
Toxicity to terrestrial organisms	:	LD50 (Anas platyrhynchos (Mallard duck)): > 5,620 ppm End point: Acute oral toxicity Remarks: Dietary LD50 (Colinus virginianus (Bobwhite quail)): 2,250 mg/kg End point: Acute oral toxicity NOEL (Colinus virginianus (Bobwhite quail)): 1000 ppm End point: Reproduction Test LD50 (Apis mellifera (bees)): > 200 µg/bee End point: Acute oral toxicity LD50 (Apis mellifera (bees)): > 200 µg/bee End point: Acute contact toxicity

Silicon dioxide:

Toxicity to fish	:	LC50 (Brachydanio rerio (zebrafish)): > 10,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10,000 mg/l Exposure time: 24 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	NOELR (Desmodesmus subspicatus (green algae)): 10,000 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials

Ecotoxicology Assessment

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

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Toxicity to fish	:	LC0 (Danio rerio (zebra fish)): 59.3 mg/l Exposure time: 96 h Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): 21 mg/l Exposure time: 72 h Test Type: static test
Toxicity to fish (Chronic toxicity)	:	NOEC (Danio rerio (zebra fish)): 1.8 mg/l Exposure time: 28 d Method: OECD Test Guideline 204 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	LOEC (Daphnia magna (Water flea)): 2 mg/l Exposure time: 21 d Test Type: semi-static test Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): > 560 mg/l Exposure time: 6 h Test Type: Growth inhibition
Toxicity to soil dwelling organisms	:	LC0 (Eisenia fetida (earthworms)): >= 654 mg/kg Exposure time: 14 d Method: OECD Test Guideline 207 Remarks: Based on data from similar materials

Persistence and degradability

Components:

carfentrazone-ethyl (ISO):

Biodegradability	:	Result: Not readily biodegradable.

Silicon dioxide:

Biodegradability	:	Result: Not biodegradable Remarks: Based on data from similar materials

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Biodegradability	:	Inoculum: activated sludge, non-adapted Result: Readily biodegradable. Method: OECD Test Guideline 301E

Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: No data is available on the product itself.

Components:

carfentrazone-ethyl (ISO):

Bioaccumulation	:	Species: Oncorhynchus mykiss (rainbow trout) Bioconcentration factor (BCF): 176 Exposure time: 28 d Method: OECD Test Guideline 305E Remarks: Bioaccumulation is unlikely.
Partition coefficient: n-octanol/water	:	log Pow: 3.7 (20 °C)

Silicon dioxide:

Bioaccumulation	:	Bioconcentration factor (BCF): 3.16 Remarks: Based on data from similar materials

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Partition coefficient: n-octanol/water	:	log Pow: 1.72 (40 °C) pH: 6.5 Remarks: Based on data from similar materials

Mobility in soil

Product:

Distribution among environmental compartments	:	Remarks: No data is available on the product itself.

Components:

carfentrazone-ethyl (ISO):

Distribution among environmental compartments	:	Remarks: Mobile in soils

Other adverse effects

Product:

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.

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. Do not re-use empty containers. Packaging that is not properly emptied must be disposed of as the unused product.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Carfentrazone-ethyl)
Class	:	9
Subsidiary risk	:	ENVIRONM.
Packing group	:	III
Labels	:	9 (ENVIRONM.)

IATA-DGR

UN/ID No.	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Carfentrazone-ethyl)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	956
Packing instruction (passenger aircraft)	:	956
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Carfentrazone-ethyl)
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.

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

Priority Chemical List (PCL) : Not applicable

Chemical Control Order (CCO) : Not applicable

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

TCSI	:	On the inventory, or 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. ETHYL (RS)-2-CHLORO-3-{2-CHLORO-5-[4-(DIFLUOROMETHYL)-4,5-DIHYDRO-3-METHYL-5-OXO-1H-1,2,4-TRIAZOL-1-YL]-4-FLUOROPHENYL}PROPIONATE
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

16. OTHER INFORMATION

Revision Date	:	2023/10/27
Date format	:	yyyy/mm/dd

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
PH OEL	:	Philippines. Threshold Limit Values For Airborne Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
PH OEL / TWA	:	Threshold limit for airborne contaminants

AIIC - 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 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; 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; WHMIS - Workplace Hazardous Materials Information System

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