SAFETY DATA SHEET

Hammer Force® Herbicide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	03.03.2025	50000426	Date of first issue: 03.03.2025

Section 1: Identification

Product name : Hammer Force® Herbicide

Recommended use of the chemical and restrictions on use

Recommended use : Can be used as herbicide only.

Restrictions on use : Use as recommended by the label.

Manufacturer or supplier's details

Company : FMC New Zealand Ltd

Address : Level 5, 3 Te Kehu Way, Mount Wellington
1060 Auckland
New Zealand

Telephone : +640800658080

Telefax : (09)-271-2961

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

Emergency telephone number : For leak, fire, spill or accident emergencies, call:
0800 734 607 (Ixom)

Medical emergency:
0800 764 766 (NZ Poisons Information Centre)
0800 111174 (24 hour Medical Emergency)
0800 387668 (Transport Emergency)

Section 2: Hazard identification

GHS Classification

Serious eye damage/eye irritation : Category 2

Specific target organ toxicity - repeated exposure : Category 2

Aspiration hazard : Category 1

Hazardous to the aquatic environment - acute hazard : Category 1

Hazardous to the aquatic : Category 1

environment - chronic hazard

Hazardous to the environment : Hazardous to soil organisms

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H304 May be fatal if swallowed and enters airways.
H319 Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.
H423 Harmful to the soil environment.

Precautionary statements : P103 Read carefully and follow all instructions.

Prevention:

P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
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.
P331 Do NOT induce vomiting.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards which do not result in classification

None known.

Section 3: Composition/information on ingredients

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
carfentrazone-ethyl (ISO)	128639-02-1	>= 20 -< 25
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	>= 20 -< 30
propane-1,2-diol	57-55-6	>= 1 -< 10

Section 4: First-aid measures

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
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 : Wash off with soap and water.
Call a physician if irritation develops or 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 induce vomiting.
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 : May be fatal if swallowed and enters airways.
Causes serious eye irritation.
May cause 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
Do not spread spilled material with high-pressure water streams.

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

Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NOx) Chlorine compounds Fluorine compounds
Specific extinguishing methods	:	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 firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Hazchem Code	:	3Z

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	:	Evacuate personnel to safe areas. Use personal protective equipment. If it can be safely done, stop the leak. Do not touch or walk through the spilled material.
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 vapours/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.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
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.

Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : Do not store near acids.

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

Section 8: Exposure controls/personal protection

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
carfentrazone-ethyl (ISO)	128639-02-1	TWA (Inhalable particulate matter)	1 mg/m3	ACGIH
propane-1,2-diol	57-55-6	WES-TWA (particulate)	10 mg/m3	NZ OEL
		WES-TWA (Vapour and particulates)	150 ppm 474 mg/m3	NZ OEL

Personal protective equipment

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

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

Section 9: Physical and chemical properties

Physical state : liquid

Form : liquid

Colour	:	off-white
Odour	:	solvent-like
pH	:	4.29
Melting point/freezing point	:	Not applicable
Boiling point/boiling range	:	No data available
Flash point	:	104 °C
Self-ignition	:	No data available
Density	:	8.8 lb/gal
Viscosity		
Viscosity, dynamic	:	1,000 - 3,000 mPa,s
Explosive properties	:	Not explosive
Oxidizing properties	:	The product is not 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	:	Protect from frost, heat and sunlight.
Incompatible materials	:	Strong oxidizing agents Strong acids and strong bases
Hazardous decomposition products	:	Nitrogen oxides (NOx) Carbon oxides Chlorine compounds Fluorine compounds

Section 11: Toxicological information

Acute toxicity

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

Product:

Acute oral toxicity : LD50 (Rat): 4,077 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 6.31 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 4,000 mg/kg
Remarks: Based on data from similar materials

Components:

carfentrazone-ethyl (ISO):

Acute oral toxicity : LD50 (Rat, female): 5,143 mg/kg
Method: US EPA Test Guideline OPP 81-1
Symptoms: Tremors
GLP: yes

LD50 (Rat, female): > 5,000 mg/kg
Method: OECD Test Guideline 425
GLP: yes
Assessment: The substance or mixture has no acute oral toxicity
Remarks: no mortality

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
GLP: yes
Assessment: The component/mixture is minimally toxic after single contact with skin.
Remarks: no mortality

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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 : LC50 (Rat): > 4.688 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

propane-1,2-diol:

Acute oral toxicity : LD50 (Rat, male and female): 22,000 mg/kg

Acute inhalation toxicity : LC0 (Rabbit): 31.7 mg/l
Exposure time: 2 h
Test atmosphere: vapour
Remarks: no mortality

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

Skin corrosion/irritation

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

Product:

Result : slight irritation
Remarks : Based on data from similar materials

Components:

carfentrazone-ethyl (ISO):

Species : Rabbit
Assessment : Not classified as irritant
Method : US EPA Test Guideline OPP 81-5
Result : slight irritation
GLP : yes

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species : Rabbit
Assessment : Repeated exposure may cause skin dryness or cracking.
Result : No skin irritation
Remarks : Minimal effects that do not meet the threshold for classification.
Based on data from similar materials

propane-1,2-diol:

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

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Result	:	Eye irritation

Components:

carfentrazone-ethyl (ISO):

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species	:	Rabbit
Assessment	:	No eye irritation
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

propane-1,2-diol:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

Respiratory or skin sensitisation

Skin sensitisation

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

Respiratory sensitisation

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

Product:

Result	:	Does not cause skin sensitisation.
Remarks	:	Based on data from similar materials

Components:

carfentrazone-ethyl (ISO):

Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	US EPA Test Guideline OPP 81-6
Result	:	Does not cause skin sensitisation.
GLP	:	yes

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

propane-1,2-diol:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Result	:	negative

Chronic toxicity

Germ cell mutagenicity

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

Product:

Germ cell mutagenicity - Assessment	:	Contains no ingredient listed as a mutagen

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 GLP: yes 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 GLP: yes Test Type: Ames test Metabolic activation: with and without metabolic activation Method: U.S. EPA 84-2 Result: negative GLP: yes Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Result: negative
GLP: yes

Test Type: unscheduled DNA synthesis assay
Species: Rat (male)
Result: negative
GLP: yes

Germ cell mutagenicity - Assessment : No genotoxic potential

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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 : Test Type: Bone marrow chromosome aberration
Species: Rat
Application Route: inhalation (vapour)
Result: negative

propane-1,2-diol:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Result: negative

Carcinogenicity

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

Components:

carfentrazone-ethyl (ISO):

Species : Rat, female
Application Route : Ingestion
Exposure time : 2 Years
NOAEL : 3 mg/kg bw/day

LOAEL	:	12 mg/kg bw/day
Method	:	U.S. EPA 83-5
Result	:	no increase in tumors observed
Target Organs	:	Liver
GLP	:	yes

Species	:	Mouse, female
Application Route	:	Ingestion
Exposure time	:	80 weeks
NOAEL	:	10 mg/kg bw/day
LOAEL	:	110 mg/kg bw/day
Method	:	U.S. EPA 83-5
Result	:	no increase in tumors observed
Target Organs	:	Liver
GLP	:	yes

Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species	:	Rat, male and female
Application Route	:	inhalation (vapour)
Exposure time	:	12 month(s)
NOAEC	:	1.8 mg/l
Result	:	negative
Remarks	:	Based on data from similar materials

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

propane-1,2-diol:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	2 Years
Result	:	negative

Reproductive toxicity

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

Product:

Reproductive toxicity - Assessment	:	Contains no ingredient listed as toxic to reproduction

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 foetal development	:	Test Type: Embryo-foetal development Species: Rat, female Application Route: Oral General Toxicity Maternal: NOEL: 100 mg/kg bw/day Embryo-foetal toxicity: NOEL: 600 mg/kg bw/day Result: negative Test Type: Embryo-foetal development Species: Rabbit, female Application Route: Oral General Toxicity Maternal: NOEL: 150 mg/kg bw/day Embryo-foetal toxicity: NOEL: > 300 mg/kg bw/day Result: negative
Reproductive toxicity - Assessment	:	Animal testing showed no reproductive toxicity.

propane-1,2-diol:

Effects on fertility	:	Test Type: reproductive and developmental toxicity study Species: Mouse Application Route: Oral Result: negative
Effects on foetal development	:	Test Type: Embryo-foetal development Species: Mouse Application Route: Oral Method: OECD Test Guideline 414 Result: Animal testing did not show any effects on fertility. Remarks: Based on data from similar materials

STOT - single exposure

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

Components:

carfentrazone-ethyl (ISO):

Remarks	:	No significant adverse effects were reported

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Product:

Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Components:

carfentrazone-ethyl (ISO):

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
NOAEL	:	143 mg/kg
LOAEL	:	571 mg/kg
Application Route	:	Oral
Exposure time	:	90 days
Method	:	EPA 82-1
GLP	:	yes
Target Organs	:	Blood, Liver

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

Species	:	Rat, male
NOAEL	:	58 mg/kg
Exposure time	:	90 d
Method	:	EPA 82-1
GLP	:	yes

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Species	:	Rat, male and female
NOAEC	:	0.9 - 1.8 mg/l
Application Route	:	inhalation (vapour)
Exposure time	:	12 Months

propane-1,2-diol:

Species	:	Rat, male and female
NOAEL	:	1,700 mg/kg
Application Route	:	Oral
Exposure time	:	2 Years

Species	:	Rat, male and female
NOAEL	:	1,000 mg/kg
LOAEL	:	160 mg/kg
Application Route	:	Inhalation
Exposure time	:	90 Days

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

May be fatal if swallowed and enters airways.

Components:

carfentrazone-ethyl (ISO):

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

May be fatal if swallowed and enters airways.

Experience with human exposure

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Skin contact : Symptoms: Repeated exposure may cause skin dryness or cracking.

Neurological effects

Components:

carfentrazone-ethyl (ISO):

No neurotoxicity observed in animal studies

Further information

Product:

Remarks : Solvents may degrease the skin.

Components:

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Remarks : Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Section 12: Ecological information

Ecotoxicity

Product:

Ecotoxicology Assessment

Toxicity Data on Soil : Harmful to the soil environment.

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

LC50 (Menidia beryllina (Silverside)): 1.14 mg/l
Exposure time: 96 h
Test Type: flow-through test

LC50 (Oncorhynchus mykiss (rainbow trout)): 1.6 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: EPA OPP 72-1

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 (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

EbC50 (Selenastrum capricornutum (green algae)): 16 µg/l
Exposure time: 120 h

EC50 (Navicula pelliculosa (Diatom)): 12 µg/l
Exposure time: 72 h
Test Type: static test

EC50 (Skeletonema costatum (Diatom)): 15 µg/l

Exposure time: 72 h
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

NOEC (Oncorhynchus mykiss (rainbow trout)): 0.118 mg/l
Exposure time: 102 d
Test Type: flow-through test
Method: US EPA Test Guideline OPP 72-4

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.309 mg/l
End point: Growth
Exposure time: 21 d
Method: OECD Test Guideline 202

M-Factor (Chronic aquatic toxicity) : 10

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

Ecotoxicology Assessment

Toxicity Data on Soil : Harmful to the soil environment.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 1.4 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): 1 - 3 mg/l
Exposure time: 24 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EL50 (Daphnia magna (Water flea)): 0.89 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms : LL50 (Tetrahymena pyriformis): 677.9 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

propane-1,2-diol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : (Mysidopsis bahia (opossum shrimp)): 18,800 mg/l
Exposure time: 96 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 34,100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 13,020 mg/l
Exposure time: 7 d

Toxicity to microorganisms : EC50 (Pseudomonas putida): > 20,000 mg/l
Exposure time: 18 h

Persistence and degradability

Components:

carfentrazone-ethyl (ISO):

Biodegradability : Result: Not readily biodegradable.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 58.6 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

propane-1,2-diol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 23.6 %
Exposure time: 64 d
Method: OECD Test Guideline 306

Bioaccumulative potential

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)

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Bioaccumulation : Remarks: The product/substance has a potential to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.72
Method: QSAR

propane-1,2-diol:

Partition coefficient: n-octanol/water : log Pow: -1.07

Mobility in soil

Components:

carfentrazone-ethyl (ISO):

Distribution among environmental compartments : Remarks: Mobile in soils

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Distribution among environ- : Remarks: Expected to partition to sediment and wastewater

mental compartments | solids. Moderately volatile.

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.

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.
Empty containers can be landfilled after cleaning, when in compliance with local regulations.

Section 14: Transport information

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Carfentrazone-ethyl)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl)
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. (Carfentrazone-ethyl)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes
Remarks	:	Environmentally hazardous substances/Marine Pollutants in single or combination packaging containing a net quantity per single or inner packaging of 5 kg or less for solids, or having a net quantity per single or inner packaging of 5 L or less for liquids may be transported as non-dangerous goods as provided in special provision A197 of the IATA and section 2.10.2.7 of IMDG code.

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

Not applicable for product as supplied.

National Regulations

NZS 5433

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Carfentrazone-ethyl)
Class	:	9
Packing group	:	III
Labels	:	9
Hazchem Code	:	3Z
Marine pollutant	:	yes

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

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

HSNO Approval Number

HSR007989
ACVM Number: P007983

Tolerable Exposure Limits (TEL)

Not applicable

Environmental Exposure Limits (EEL)

Not applicable

The components 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. carfentrazone-ethyl (ISO) Polyethylene glycol polyester
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

Section 16: Other information

Revision Date	:	03.03.2025
Date format	:	dd.mm.yyyy

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NZ OEL	:	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NZ OEL / WES-TWA	:	Workplace Exposure Standard - Time Weighted average

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 con-

centration; 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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