

MATERIAL SAFETY DATA SHEET



CARFENTRAZONE-ETHYL 400 G/L EC

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	19.07.2023	50000179	Date of first issue: 19.07.2023

1. IDENTIFICATION

Product name : CARFENTRAZONE-ETHYL 400 G/L EC

Other means of identification : AURORA® 400 EC
AFFINITY® 400 EC

Manufacturer or supplier's details

Company : FMC Corporation

Address : 2929 WALNUT ST
PHILADELPHIA PA 19104
USA

Telephone : (215) 299-6000

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

Emergency telephone : 1 703 / 741-5970 (CHEMTREC - International)

Medical Emergency Number : Desde Ecuador: 1800 593005 (Quito, La Sierra, Centro y Norte).
Desde Bogotá: 288 60 12; Línea Nacional: 01 8000 916012
Desde Venezuela: 0800 1005012
Desde Perú: SAMU: 106;
CISPROQUIM®: 080-050-847;
FMC LATINOAMERICA S.A. SUCURSAL: 421-4811;

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

Restrictions on use : Use as recommended by the label.

2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 4

Carcinogenicity : Category 2

Specific target organ toxicity - : Category 2 (Liver)

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repeated exposure

Aspiration hazard : Category 1

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :    

Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H304 May be fatal if swallowed and enters airways.
H351 Suspected of causing cancer.
H373 May cause damage to organs (Liver) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P203 Obtain, read and follow all safety instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapors.
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.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
Response:
P301 + P316 IF SWALLOWED: Get emergency medical help immediately.
P303 + P361 + P353 + P317 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Get medical help.
P304 + P340 + P317 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
P318 IF exposed or concerned, get medical advice.

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P331 Do NOT induce vomiting.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.
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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	$\geq 50 - < 70$
carfentrazone-ethyl (ISO)	128639-02-1	$\geq 30 - < 50$
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	$\geq 3 - < 10$
2-ethylhexan-1-ol	104-76-7	$\geq 1 - < 2,5$

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.
If symptoms persist, call a physician.
If on clothes, remove clothes.
Wash contaminated clothing before re-use.

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.

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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	:	Harmful if swallowed, in contact with skin or if inhaled. May be fatal if swallowed and enters airways. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Swallowing or inhaling may result in sudden shortness of breath, coughing, nausea and or abdominal pain.
Protection of first-aiders	:	Avoid inhalation, ingestion and contact with skin and eyes.
Notes to physician	:	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	:	52 °C
Ignition temperature	:	No data available
Upper explosion limit / Upper flammability limit	:	Not available for this mixture.
Lower explosion limit / Lower flammability limit	:	Not available for this mixture.
Suitable extinguishing media	:	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	:	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	:	Fire may produce irritating, corrosive and/or toxic gases. Carbon oxides Nitrogen oxides (NOx) Chlorine compounds Fluorine compounds Hydrogen cyanide Hydrogen chloride
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. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Collect contaminated fire extinguishing water separately. This

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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, protective equipment and emergency procedures : Use personal protective equipment.
Evacuate personnel to safe areas.
Remove all sources of ignition.
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Ensure adequate ventilation.
If it can be safely done, stop the leak.
Do not touch or walk through the spilled material.

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Prevent product from entering drains.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Never return spills in original containers for re-use.
Collect as much of the spill as possible with a suitable absorbent material.
Pick up and transfer to properly labeled containers.
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Avoid formation of aerosol.
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.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : No smoking.
Keep container tightly closed in a dry and well-ventilated place.

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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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH
carfentrazone-ethyl (ISO)	128639-02-1	TWA (Inhalable particulate matter)	1 mg/m ³	ACGIH
2-ethylhexan-1-ol	104-76-7	TWA	5 ppm	ACGIH

Personal protective equipment

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

Hand protection
Material : Protective gloves

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.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Do not inhale aerosol.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state	: liquid
Color	: yellow
Odor	: aromatic
Odor Threshold	: No data available
pH	: 4,6 (25 °C) Concentration: 10 g/l
Melting point/range	: No data available
Boiling point/boiling range	: No data available
Flash point	: 52 °C
Evaporation rate	: No data available
Flammability (liquids)	: Sustains combustion
Self-ignition	: No data available
Upper explosion limit / Upper flammability limit	: Not available for this mixture.
Lower explosion limit / Lower flammability limit	: Not available for this mixture.
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: 1,0721
Density	: 1,063 g/cm3
Solubility(ies)	
Water solubility	: Miscible
Solubility in other solvents	: Miscible Solvent: Toluene Miscible Solvent: Methanol
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available

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Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	59,62 mm ² /s (20 °C)
		5,16 mm ² /s (40 °C)
Oxidizing properties	:	Non-oxidizing
Surface tension	:	35,34 mN/m
Molecular weight	:	Not applicable

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	:	Vapors may form explosive mixture with air. No decomposition if stored and applied as directed. Vapors may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks. Avoid extreme temperatures. Avoid formation of aerosol.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed, in contact with skin or if inhaled.

Product:

Acute oral toxicity	:	LD50(Rat): > 3.000 mg/kg Assessment: The component/mixture is minimally toxic after single ingestion. Remarks: no mortality
		Assessment: The component/mixture is moderately toxic after single ingestion. Remarks: Resolution no. 2075
Acute inhalation toxicity	:	LC50(Rat): > 10,41 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity

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Remarks: no mortality

Assessment: The component/mixture is moderately toxic after short term inhalation.

Remarks: Resolution no. 2075

Acute dermal toxicity : LD50(Rat): > 4.000 mg/kg
Assessment: The component/mixture is minimally toxic after single contact with skin.
Remarks: no mortality

Assessment: The component/mixture is moderately toxic after single contact with skin.

Remarks: Resolution no. 2075

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Acute oral toxicity : LD50 (Rat, female): 3.492 mg/kg
Method: OECD Test Guideline 401

LD50 (Rat, male): 6.984 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): > 6,193 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3.160 mg/kg
Assessment: The component/mixture is minimally toxic after single contact with skin.

carfentrazone-ethyl (ISO):

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: FIFRA 81.01

Acute inhalation toxicity : LC50 (Rat): > 5,09 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 4.000 mg/kg
Method: US EPA Test Guideline OPP 81-2
Assessment: The substance or mixture has no acute dermal toxicity

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401

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Remarks: Based on data from similar materials

Acute inhalation toxicity : LD50 (Rat, male and female): > 1,9 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

Acute dermal toxicity : LD50 (Rabbit, male and female): > 4.000 mg/kg
Remarks: Based on data from similar materials

2-ethylhexan-1-ol:

Acute oral toxicity : LD50 (Rat, male): 2.047 mg/kg

Acute inhalation toxicity : LC50 (Rat): 4,3 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat, male and female): > 3.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Assessment : No skin irritation
Result : No skin irritation

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Mild skin irritation

carfentrazone-ethyl (ISO):

Species : Rabbit
Method : US EPA Test Guideline OPP 81-5
Result : No skin irritation

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Assessment : Irritating to skin.

2-ethylhexan-1-ol:

Species : Rabbit
Method : OECD Test Guideline 404

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Result : Skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Assessment	:	No eye irritation
Result	:	No eye irritation

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species	:	Rabbit
Result	:	No eye irritation

carfentrazone-ethyl (ISO):

Species	:	Rabbit
Assessment	:	No eye irritation
Method	:	EPA OPP 81-4
Remarks	:	Minimal effects that do not meet the threshold for classification.

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Assessment	:	Risk of serious damage to eyes.
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2-ethylhexan-1-ol:

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

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Routes of exposure	:	Dermal
Species	:	Guinea pig
Assessment	:	Not a skin sensitizer.
Result	:	Does not cause skin sensitization.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Test Type	:	Maximization Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig

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Method : OECD Test Guideline 406
Result : Not a skin sensitizer.

carfentrazone-ethyl (ISO):

Species : Guinea pig
Method : US EPA Test Guideline OPP 81-6
Result : Does not cause skin sensitization.

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

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

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Result: negative

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

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Genotoxicity in vitro : Test Type: in vitro DNA damage and/or repair study
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
Result: negative

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration.
Species: Rat (male and female)
Application Route: Inhalation
Result: negative

carfentrazone-ethyl (ISO):

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

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: Metabolic activation
Result: negative

Test Type: Chromosome aberration test in vitro

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Test system: Chinese hamster ovary cells
Result: positive

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

Germ cell mutagenicity - Assessment : No genotoxic potential.

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

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: Micronucleus test
Species: Mouse (male and female)
Application Route: Intraperitoneal injection
Exposure time: 72 hrs
Method: Mutagenicity (micronucleus test)
Remarks: Based on data from similar materials

2-ethylhexan-1-ol:

Genotoxicity in vitro : Test Type: reverse mutation assay
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Carcinogenicity

Suspected of causing cancer.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

carfentrazone-ethyl (ISO):

Species : Rat, male and female
Application Route : Oral
Exposure time : 104 weeks
NOAEL : 3 - 9 mg/kg bw/day
Result : negative

Species : Mouse, male and female
Application Route : Oral
Exposure time : 80 weeks

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NOAEL : > 7.000 ppm
Result : negative

Species : Dog, male and female
Exposure time : 52 weeks
NOAEL : 150 mg/kg bw/day
Result : negative

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

2-ethylhexan-1-ol:

Species : Rat
Application Route : Oral
Exposure time : 24 month(s)
Result : negative

Reproductive toxicity

Not classified based on available information.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Effects on fertility : Test Type: Three-generation study
Species: Rat
Application Route: inhalation (vapor)
Fertility: NOAEC Mating/Fertility: 7,5 mg/l
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Species: Mouse
Application Route: inhalation (vapor)
General Toxicity Maternal: LOAEC: 500 part per million
Symptoms: Maternal effects.

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

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Embryo-fetal toxicity.: NOEL: > 300 mg/kg bw/day
Result: negative

Reproductive toxicity - Assessment : Animal testing showed no reproductive toxicity.

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Effects on fertility : Test Type: one-generation reproductive toxicity
Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 415
Result: No effects on fertility and early embryonic development were detected.

2-ethylhexan-1-ol:

Effects on fetal development : Test Type: Embryo-fetal development
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 414
Result: negative

STOT-single exposure

Not classified based on available information.

Product:

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

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Assessment : May cause respiratory irritation., May cause drowsiness or dizziness.

carfentrazone-ethyl (ISO):

Remarks : No significant adverse effects were reported

2-ethylhexan-1-ol:

Assessment : May cause respiratory irritation.

STOT-repeated exposure

May cause damage to organs (Liver) through prolonged or repeated exposure.

Product:

Target Organs : Liver
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

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Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

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

carfentrazone-ethyl (ISO):

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

Repeated dose toxicity

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species : Rat, male and female
 NOAEC : 0,8 - 0,9 mg/l
 Application Route : Inhalation
 Test atmosphere : vapor
 Remarks : Based on data from similar materials

Species : Rat, male
 NOAEL : 600 mg/kg
 Application Route : Oral
 Remarks : Based on data from similar materials

carfentrazone-ethyl (ISO):

Species : Rat, male and female
 NOEL : 1000 ppm
 Application Route : Oral
 Exposure time : 90 days

Species : Rat, male and female
 NOEL : 1000 ppm
 Application Route : Dermal
 Exposure time : 21 days

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Species : Rat, male and female
 NOAEL : 500 mg/kg
 Application Route : Oral
 Method : OECD Test Guideline 407
 Remarks : Based on data from similar materials

Species : Rat, male and female
 NOAEL : 50 mg/m3
 Application Route : Inhalation
 Method : OECD Test Guideline 412
 Remarks : Based on data from similar materials

Species : Rat, male and female
 NOAEL : > 1.000 mg/kg

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Application Route : Dermal
Method : OECD Test Guideline 410
Remarks : Based on data from similar materials

2-ethylhexan-1-ol:

Species : Rat
: 250 mg/kg
Application Route : Oral
Exposure time : 13 weeks
Method : OECD Test Guideline 408

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

May be fatal if swallowed and enters airways.

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 : Solvents may degrease the skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 12,9 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia similis (Water flea)): 13,1 mg/l
aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): 0,06
plants mg/l
Exposure time: 96 h

Toxicity to soil dwelling or- : LC50: 2.219 mg/kg
ganisms Exposure time: 14 d
Species: Eisenia fetida (earthworms)

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Toxicity to terrestrial organisms : > 2.000 mg/kg
Species: Coturnix japonica (Japanese quail)

LC50: > 100
Exposure time: 24 h
Species: Apis mellifera (bees)

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Toxicity to fish : NOEC (Oncorhynchus mykiss (rainbow trout)): 4,5 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

LL50 (Pimephales promelas (fathead minnow)): 8,2 mg/l
Exposure time: 96 h
Test Type: semi-static test
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 4,5 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (microalgae)): 3,1 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 : EC50 (Tetrahymena pyriformis): 15,41 mg/l
Exposure time: 40 h
Test Type: Growth inhibition
Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

Toxicity to fish (Chronic toxicity) : NOELR: 2,6 mg/l
Exposure time: 14 d
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 204
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: 2,6 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

carfentrazone-ethyl (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,6 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 9,8 mg/l
Exposure time: 48 h

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

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC: 0,11 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,22 mg/l
Exposure time: 21 d
Species: Crustaceans

M-Factor (Chronic aquatic toxicity) : 100

Toxicity to soil dwelling organisms : LC50: > 820 mg/kg
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : LD50: > 5.620 ppm
End point: Acute oral toxicity
Species: Anas platyrhynchos (Mallard duck)
Remarks: Dietary

LD50: > 5.620 ppm
End point: Acute oral toxicity
Species: Colinus virginianus (Bobwhite quail)
Remarks: Dietary

LD50: > 200 µg/bee
End point: Acute oral toxicity
Species: Apis mellifera (bees)

LD50: > 200 µg/bee
End point: Acute contact toxicity
Species: Apis mellifera (bees)

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Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Toxicity to fish	:	LL50 (Marine species): 10.000 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
		LL50 (Pimephales promelas (fathead minnow)): 1.000 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1.000 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (green algae)): > 1.000 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to microorganisms	:	NOEC (activated sludge): 10.000 mg/l Method: OECD Test Guideline 209

Ecotoxicology Assessment

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

2-ethylhexan-1-ol:

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): 17,1 - 28,2 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 39 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC10 (Desmodesmus subspicatus (green algae)): 3,2 mg/l Exposure time: 72 h EC50 (Desmodesmus subspicatus (green algae)): 11,5 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	EC50 (Anabaena flos-aquae (cyanobacterium)): 16,6 mg/l Exposure time: 72 h

Persistence and degradability

Product:

Photodegradation	:	
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Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Biodegradability	:	Concentration: 49,2 mg/l Result: Inherently biodegradable.
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Biodegradation: 77,05 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

carfentrazone-ethyl (ISO):

Biodegradability : Result: Not readily biodegradable.

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Biodegradability : Result: Not readily biodegradable.

2-ethylhexan-1-ol:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

carfentrazone-ethyl (ISO):

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 176
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 3,36 (20 °C)

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Partition coefficient: n-octanol/water : log Pow: 22,1

2-ethylhexan-1-ol:

Partition coefficient: n-octanol/water : log Pow: 2,9 (25 °C)

Mobility in soil

Components:

carfentrazone-ethyl (ISO):

Distribution among environmental compartments : Remarks: The substance/mixture and its soil metabolites have a potential for being mobile, but were not detected in a field leaching study.

Koc: 866, log Koc: 2,93

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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 : It is prohibited to reuse, bury, burn, or sell containers. Rinsable containers: Triple rinse containers of less than 20 liters and pressure rinse containers of 20 liters or more. Triple rinsing: Add water up to ¼ of the container's capacity, close and shake for 30 seconds. Pour the rinse water into the mixing tank, considering this volume of water within the recommended volume for mixing preparation. Perform this procedure three times. Pressure rinsing: Activate the pressure rinsing device for 30 seconds, considering the volume of water used as part of the recommended volume for mixing preparation. In both procedures, punctured the container on its base without damaging the label. In all cases, take the empty containers to collection points indicated by the local empty containers program.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S. (Carfentrazone-ethyl, Aromatic hydrocarbons)

Class : 3
Packing group : III
Labels : 3

IATA-DGR

UN/ID No. : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S. (Carfentrazone-ethyl, Aromatic hydrocarbons)

Class : 3
Packing group : III
Labels : Flammable Liquids

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Packing instruction (cargo aircraft) : 366

Packing instruction (passenger aircraft) : 355

IMDG-Code

UN number : UN 1993

Proper shipping name : FLAMMABLE LIQUID, N.O.S. (Carfentrazone-ethyl, Aromatic hydrocarbons)

Class : 3

Packing group : III

Labels : 3

EmS Code : F-E, S-E

Marine pollutant : yes

Transport in bulk according to IMO instruments

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

This document has been prepared in accordance with the Andean Technical Manual for the Registration and Control of Chemical Pesticides for Agricultural Use - RESOLUTION N° 2075 (2019) and Adaptation of labels to GHS (Resolution 0245 – December 2021).

Organic Law on Integral Prevention of Social and Economic Phenomenon of Drugs and of Regulation and Use Control of Listed Substances subject to Monitoring : Not applicable

International Regulations

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

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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

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Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA	:	8-hour, 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 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 Recom-

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mendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Disclaimer

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