SAFETY DATA SHEET
according to the Globally Harmonized System

AURORA® 400 EC

Version	Revision Date:	SDS Number:	Date of last issue: -
4.0	21.07.2025	50000179	Date of first issue: 19.07.2023

1. IDENTIFICATION

Product name : AURORA® 400 EC

Manufacturer or supplier's details

Manufacturers : **FMC QUIMICA DO BRASIL LTDA.**
Dir.: Av. Antonio Carlos Guillaumon, 25.Distrito Industrial III - 38044-760; Uberaba, MG, Brasil

TAGMA BRASIL INDUSTRIA E COMERCIO
DEPRODUCTOS QUIMICOS LTDA.Dir.: Av. Roberto Simonsen, 1459 Paulinia, SP, Brasil

NUTRIEN AG SOLUTIONS ARGENTINA S.A.
Dir.: Ruta 33 Km 738 (2170) Casilda, Santa Fé,Republica de Argentina.

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

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

Medical Emergency Number : CALL 800-10-6966, JAPANESE UNIVERSITY HOSPITAL POISON INFORMATION CENTER. SANTA CRUZ-BOLIVIA.

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 - single exposure : Category 3 (Respiratory system, Central nervous system)

Specific target organ toxicity - repeated exposure : Category 2 (Liver)

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.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
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 hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or with adequate ventilation.
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.
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 + P233 Store in a well-ventilated place. Keep container tightly closed.
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

Hazard Statements required by Andean Technical Manual for the Registration and Control of Chemical Pesticides for Agricultural Use (Resolution no. 2075):
Harmful if swallowed, in contact with skin or if inhaled.

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	>= 50 - < 70
carfentrazone-ethyl (ISO)	128639-02-1	>= 30 - < 50
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	>= 3 - < 10
2-ethylhexan-1-ol	104-76-7	>= 1 - < 2,5

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.
Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.

If inhaled : Consult a physician after significant exposure.

		If unconscious, place in recovery position and seek medical advice.
In case of skin contact	:	Wash off with soap and water. If symptoms persist, call a physician. 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.
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. May cause respiratory irritation. May cause drowsiness or dizziness. 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

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 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. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
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.
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/m3 (total hydrocarbon vapor)	ACGIH
carfentrazone-ethyl (ISO)	128639-02-1	TWA (Inhalable particulate matter)	1 mg/m3	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

Physical state	:	liquid
Color	:	yellow
Odor	:	characteristic
Odor Threshold	:	No data available
pH	:	4,4 - 4,6 (ca. 20 °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
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	:	1,0721 g/cm3 (ca. 20 °C)
		1,0556 g/cm3 (ca. 20 °C)
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
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	5.674 mPa.s (20 °C)
Viscosity, kinematic	:	59,62 mm2/s (20 °C)
		5,16 mm2/s (40 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
Surface tension	:	35,34 mN/m, 10 g/l, ca. 25 °C
		29,71 mN/m, 10 g/l, ca. 25 °C
Molecular weight	:	Not applicable
Metal corrosion rate	:	Not corrosive to metals.

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.
Conditions to avoid	:	Heat, flames and sparks. Avoid extreme temperatures. Avoid formation of aerosol.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.

Hazardous decomposition products : No hazardous decomposition products are known.

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
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 inhala-

tion 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, 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

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
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

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

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

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

Assessment	:	Irritating to skin.

2-ethylhexan-1-ol:

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

Serious eye damage/eye irritation

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

Product:

Species	:	Rabbit

Assessment	:	No eye irritation
Result	:	No eye irritation
Remarks	:	Vapors may cause irritation to the eyes, respiratory system and the skin.
Remarks	:	Vapors may cause irritation to the eyes, respiratory system and the skin.

Components:

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

Species	:	Rabbit
Result	:	No eye irritation

carfentrazone-ethyl (ISO):

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

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

Assessment	:	Risk of serious damage to eyes.

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

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

Respiratory sensitization

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

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

carfentrazone-ethyl (ISO):

Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	US EPA Test Guideline OPP 81-6
Result	:	Does not cause skin sensitization.
GLP	:	yes

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

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

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

Product:

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

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

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.

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, 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.

2-ethylhexan-1-ol:

Species : Rat

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

Reproductive toxicity

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

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 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

May cause respiratory irritation.
May cause drowsiness or dizziness.

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.

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	:	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

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
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	:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.
Remarks	:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause

narcotic effects.
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 aquatic invertebrates	:	EC50 (Daphnia similis (Water flea)): 13,1 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): 0,06 mg/l Exposure time: 96 h
Toxicity to soil dwelling organisms	:	LC50: 2.219 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Remarks: No significant adverse effect on Nitrogen mineralization. Remarks: No significant adverse effect on Carbon mineralization.
Toxicity to terrestrial organisms	:	> 2.000 mg/kg Species: Coturnix japonica (Japanese quail) LC50: > 100 Exposure time: 48 h End point: Acute contact toxicity 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.

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

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

LC50 (Lepomis macrochirus (Bluegill sunfish)): 2 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 9,8 mg/l

aquatic invertebrates		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 microorganisms	:	NOEC (activated sludge): 1.000 mg/l Test Type: Respiration inhibition Method: OECD Test Guideline 209 GLP:
Toxicity to fish (Chronic toxicity)	:	NOEC: 22 µg/l Exposure time: 89 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: Early Life-Stage Method: OECD Test Guideline 210 GLP: yes NOEC: 0,118 mg/l Exposure time: 102 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through test Method: US EPA Test Guideline OPP 72-4
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,309 mg/l End point: Growth Exposure time: 21 d

Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

NOEC: 0,316 mg/l
End point: Growth
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

NOEC: 35 mg/l
End point: reproduction
Exposure time: 21 d
Species: Daphnia
Method: US EPA Test Guideline OPPTS 850.1300
Remarks: Information given is based on data obtained from similar product.

M-Factor (Chronic aquatic toxicity) : 10

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

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: > 5.620 ppm
End point: Acute oral toxicity
Species: Anas platyrhynchos (Mallard duck)
Remarks: Dietary

LC50: > 5.620 ppm
End point: Acute oral toxicity
Species: Colinus virginianus (Bobwhite quail)
Remarks: Dietary

LD50: > 2.000 mg/kg
End point: Acute oral toxicity
Species: Colinus virginianus (Bobwhite quail)
Method: EPA OPP 71-1

LD50: > 2.250 mg/kg
End point: Acute oral toxicity
Species: Colinus virginianus (Bobwhite quail)
Method: EPA OPP 71-1

NOEL: 1000 ppm
End point: Reproduction Test

Species: Colinus virginianus (Bobwhite quail)

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)

Ecotoxicology Assessment

Toxicity Data on Soil : Harmful to the soil environment.

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 :

Components:

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

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

carfentrazone-ethyl (ISO):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 3,9 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Stability in water : Degradation half life: 3,6 h pH: 9

Degradation half life: 8,6 d pH: 7

Photodegradation :

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

Remarks: No data available

Components:

carfentrazone-ethyl (ISO):

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)

Exposure time: 28 d
Bioconcentration factor (BCF): 176
Method: OECD Test Guideline 305E
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 3,7 (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 : Koc: 866, log Koc: 2,93
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.

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. (Solvent naphtha (petroleum), light aromatic, Carfentrazone-ethyl)
Class	:	3
Packing group	:	III
Labels	:	3
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 1993
Proper shipping name	:	Flammable liquid, n.o.s. (Solvent naphtha (petroleum), light aromatic, Carfentrazone-ethyl)
Class	:	3
Packing group	:	III
Labels	:	Flammable Liquids
Packing instruction (cargo aircraft)	:	366
Packing instruction (passenger aircraft)	:	355

IMDG-Code

UN number	:	UN 1993
Proper shipping name	:	FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, Carfentrazone-ethyl)
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

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

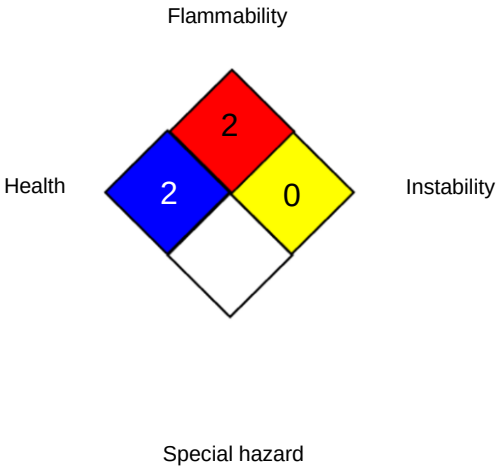
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. carfentrazone-ethyl (ISO)
ENCS	:	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

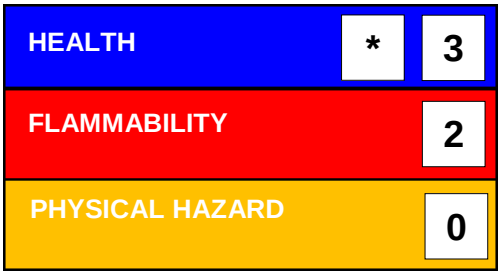
Revision Date	:	21.07.2025
Date format	:	dd.mm.yyyy

Further information

NFPA:



HMIS® IV:



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

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

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 Sub-

stances 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

Disclaimer

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