

# SAFETY DATA SHEET

## SOLARA® 500 SC



Version  
4.0

Revision Date:  
19.05.2025

SDS Number:  
50002076

Date of last issue: -  
Date of first issue: 05.01.2018

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### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : BORAL® 500 SC; CAPAZ®

#### Manufacturer or supplier's details

Company : FMC QUÍMICA DO BRASIL LTDA.

Address : AVENIDA DR. JOSÉ BONIFÁCIO  
COUTINHO NOGUEIRA 150 - 1º  
ANDAR - JARDIM MADALENA,  
CAMPINAS SP BRASIL  
TELEFONE: (19) 2042.4500

Emergency telephone : Brazil: 0800 34 35 450 (24 hours)  
+55-2139581449 (CHEMTREC)

Medical Emergency Number : 0800 7010 450

#### Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

Restrictions on use : Use as recommended by the label.

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification in accordance with ABNT NBR 14725 Standard

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 5

Specific target organ toxicity - repeated exposure : Category 2 (hematopoietic system, Nervous system)

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

#### GHS label elements in accordance with ABNT NBR 14725 Standard

Hazard pictograms :



Signal Word : WARNING

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- Hazard Statements : H302 + H332 Harmful if swallowed or if inhaled.  
H313 May be harmful in contact with skin.  
H373 May cause damage to organs (hematopoietic system, Nervous system) through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.
- Precautionary Statements : **Prevention:**  
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.  
**Response:**  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P302 + P312 IF ON SKIN: Call a POISON CENTER/ doctor if you feel unwell.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P314 Get medical advice/ attention if you feel unwell.  
P391 Collect spillage.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards which do not result in classification

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
Sulfentrazone	122836-35-5	Acute Tox. (Oral), 5 Acute Tox. (Inhalation), 4 Acute Tox. (Dermal), 5 STOT RE, (hematopoietic system, Nervous system) , 2 Aquatic Acute, 1 Aquatic Chronic, 1	>= 30 -< 50
2-Propenoic acid, 2-methyl-, polymer with .alpha.-methyl-.omega.-hydroxypoly(oxy-1,2-ethanediyl) and methyl 2-methyl-2-propenoate, graft	119724-54-8	Acute Tox. (Oral), 5	>= 1 -< 5

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toluene	108-88-3	Flam. Liq., 2 Acute Tox. (Inhalation), 5 Skin corrosion/irritation, 2 Repr., 2 STOT SE, (Central nervous system) , 3 STOT RE, (Inhalation)(inner ear) , 2 Asp. Tox., 1 Aquatic Acute, 2 Aquatic Chronic, 3	>= 2,5 -< 3
1,2-benzisothiazol-3(2H)-one	2634-33-5	Acute Tox. (Oral), 4 Serious eye damage/eye irritation, 1 Skin Sens., 1 Aquatic Acute, 1 Aquatic Chronic, 2	>= 0,025 -< 0,1

### SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Show this material safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : 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 : Do not induce vomiting without medical advice.  
Keep respiratory tract clear.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed or if inhaled.  
May be harmful in contact with skin.  
May cause damage to organs through prolonged or repeated exposure.

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Exposure may result in convulsions, decreased locomotion, tearing, increased sensitivity to touch, bloody discharge from the nose and incoordination.

- Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.  
Notes to physician : Treat symptomatically.

## SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, 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.  
Chlorinated compounds  
Fluorinated compounds  
Sulfur oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon oxides  
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.

## 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.  
Never return spills in original containers for re-use.  
For disposal considerations see section 13.
- Accidental Release Measures : Never return spills in original containers for re-use.  
For disposal considerations see section 13.

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|---|---|
| Environmental precautions                             | : Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so.<br>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.<br>Collect as much of the spill as possible with a suitable absorbent material.<br>Pick up and transfer to properly labeled containers.<br>Keep in suitable, closed containers for disposal. |
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## SECTION 7. HANDLING AND STORAGE

- |   |   |
|---|---|
| Advice on protection against fire and explosion | : Normal measures for preventive fire protection.   |
| Advice on safe handling                         | : Do not breathe vapors/dust.<br>Avoid exposure - obtain special instructions before use.<br>Avoid contact with skin and eyes.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Dispose of rinse water in accordance with local and national regulations. |
| Hygiene measures                                | : Avoid contact with skin, eyes and clothing.<br>Do not inhale aerosol.<br>When using do not eat or drink.<br>When using do not smoke.<br>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.<br>Containers which are opened must be carefully resealed and kept upright to prevent leakage.<br>Observe label precautions.<br>Electrical installations / working materials must comply with the technological safety standards.                               |
| Further information on storage stability        | : No decomposition if stored and applied as directed.   |

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
toluene	108-88-3	LT	78 ppm 290 mg/m <sup>3</sup>	BR OEL

Further information: Absorption through the skin,  
Degree of harmfulness: medium

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	TWA	20 ppm	ACGIH
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**Biological occupational exposure limits**

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
toluene	108-88-3	toluene	Blood	Start of the last working day of the week	0,02 mg/l	BR BEI
		toluene	Urine	End of workday	0,03 mg/l	BR BEI
		ortho-cresol	Urine	End of workday	0.3 mg/g creatinine	BR BEI
		Toluene	In blood	Prior to last shift of work-week	0,02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as possible after exposure ceases)	0,03 mg/l	ACGIH BEI

**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.
- Protective measures : Plan first aid action before beginning work with this product.  
In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Physical state : liquid

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Color	:	beige
Odor	:	characteristic
Odor Threshold	:	No data available
pH	:	5,90 (25 °C) Concentration: 10 g/l
Melting point/ range	:	No data available
Boiling point/boiling range	:	ca. 65 °C
Flash point	:	Method: Pensky-Martens closed cup - PMCC No flash up to boiling point.
Evaporation rate	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	Not available for this mixture.
Relative vapor density	:	not determined
Relative density	:	No data available
Density	:	1,0194 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	partly miscible
Partition coefficient: n-octanol/water	:	log Pow: 31,1 pH: 5  log Pow: 9,8 pH: 6  log Pow: 0,27 pH: 9
Autoignition temperature	:	No data available

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Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	825 mPa.s ( 20 °C)
		775 mPa.s ( 40 °C)
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
Surface tension	:	38,4 mN/m, ca. 20 °C
Molecular weight	:	Not applicable
Metal corrosion rate	:	Not corrosive to metals
Particle size	:	Not applicable

## **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	: Avoid extreme temperatures. Avoid formation of aerosol.
Incompatible materials	: Avoid strong acids, bases, and oxidizers.

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**SECTION 11. TOXICOLOGICAL INFORMATION**

### **Acute toxicity**

Harmful if swallowed or if inhaled.  
May be harmful in contact with skin.

**Product:**

Acute oral toxicity : LD50 Oral (Rat, female): 300 - 2.000 mg/kg  
Method: OECD Test Guideline 423  
Symptoms: Convulsions  
Assessment: The component/mixture is moderately toxic after single ingestion.

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- Acute inhalation toxicity : LC50 (Rat, male and female): > 2,933 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: prostration  
Assessment: The component/mixture is moderately toxic after short term inhalation.
- Acute dermal toxicity : LD50 (Rat): > 4.000 mg/kg  
Method: OECD Test Guideline 402  
Symptoms: Irritation  
Assessment: The component/mixture is minimally toxic after single contact with skin.

### Components:

#### **Sulfentrazone:**

- Acute oral toxicity : LD50 (Rat, female): 2.689 mg/kg  
Symptoms: ataxia, clonic convulsions, Fatality  
GLP: yes
- Acute inhalation toxicity : LC50 (Rat, male and female): > 4,13 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: EPA OPP 81 - 3  
Symptoms: ataxia, Breathing difficulties  
GLP: yes  
Remarks: no mortality
- Acute dermal toxicity : LD50 (Rabbit, male and female): > 2.000 mg/kg  
Method: EPA OPP 81-2  
GLP: yes  
Assessment: The component/mixture is minimally toxic after single contact with skin.

2-Propenoic acid, 2-methyl-, polymer with .alpha.-methyl-.omega.-hydroxypoly(oxy-1,2-ethanediyl) and methyl 2-methyl-2-propenoate, graft:

- Acute oral toxicity : LD50: > 2.000 mg/kg  
Method: Calculation method

#### **toluene:**

- Acute oral toxicity : LD50 (Rat): 5.580 mg/kg
- Acute inhalation toxicity : LC50 (Rat, male): 25,7 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
  
LC50 (Rat, female): 30 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor
- Acute dermal toxicity : (Rabbit): 12.267 mg/kg

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### 1,2-benzisothiazol-3(2H)-one:

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 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 : Not classified as irritant  
Method : OECD Test Guideline 404  
Result : No skin irritation

#### Components:

##### Sulfentrazone:

Species : Rabbit  
Assessment : No skin irritation  
Method : EPA OPP 81-5  
Result : No skin irritation  
GLP : yes

2-Propenoic acid, 2-methyl-, polymer with .alpha.-methyl-.omega.-hydroxypoly(oxy-1,2-ethanediyl) and methyl 2-methyl-2-propenoate, graft:

Result : slight irritation

##### toluene:

Species : Rabbit  
Assessment : Repeated exposure may cause skin dryness or cracking.  
Result : Skin irritation

### 1,2-benzisothiazol-3(2H)-one:

Species : Rabbit  
Exposure time : 72 h  
Method : OECD Test Guideline 404  
Result : No skin irritation

### Serious eye damage/eye irritation

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

#### Product:

Species : Rabbit  
Result : slight irritation  
Assessment : Not classified as irritant  
Method : OECD Test Guideline 405

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### Components:

#### **Sulfentrazone:**

Species : Rabbit  
Result : No eye irritation  
Assessment : No eye irritation  
Method : EPA OPP 81-4  
GLP : yes

2-Propenoic acid, 2-methyl-, polymer with .alpha.-methyl-.omega.-hydroxypoly(oxy-1,2-ethanediyl) and methyl 2-methyl-2-propenoate, graft:

Result : slight irritation

#### **toluene:**

Species : Rabbit  
Result : No eye irritation

#### **1,2-benzisothiazol-3(2H)-one:**

Species : Bovine cornea  
Result : No eye irritation  
Method : OECD Test Guideline 437

Species : Rabbit  
Result : Irreversible effects on the eye  
Method : EPA OPP 81-4

### **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  
Method : OECD Test Guideline 406  
Result : Did not cause sensitization on laboratory animals.

### Components:

#### **Sulfentrazone:**

Test Type : Maximization Test  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitization.

#### **toluene:**

Test Type : Maximization Test  
Species : Guinea pig

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Result : Not a skin sensitizer.

### 1,2-benzisothiazol-3(2H)-one:

Test Type : Maximization Test  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : May cause sensitization by skin contact.

Species : Guinea pig  
Method : FIFRA 81.06  
Result : May cause sensitization by skin contact.

### Germ cell mutagenicity

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

### Product:

Genotoxicity in vitro : Test Type: Ames test  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse  
Method: OECD Test Guideline 474  
Result: negative

### Components:

#### Sulfentrazone:

Genotoxicity in vitro : Test Type: Ames test  
Metabolic activation: with and without metabolic activation  
Result: negative

Test Type: Mouse lymphoma assay  
Test system: mouse lymphoma cells  
Metabolic activation: Metabolic activation  
Result: negative

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

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

#### toluene:

Genotoxicity in vitro : Test Type: Ames test  
Result: negative

Method: OECD Test Guideline 476  
Result: negative

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Genotoxicity in vivo : Test Type: Chromosome aberration test in vitro  
Species: Rat  
Result: negative

### 1,2-benzisothiazol-3(2H)-one:

Genotoxicity in vitro : Test Type: gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Test Type: Ames test  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: positive

Genotoxicity in vivo : Test Type: unscheduled DNA synthesis assay  
Species: Rat (male)  
Cell type: Liver cells  
Application Route: Ingestion  
Exposure time: 4 h  
Method: OECD Test Guideline 486  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

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

### Carcinogenicity

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

### Components:

#### **Sulfentrazone:**

Species : Rat, male and female  
Application Route : Ingestion  
Exposure time : 2 Years  
Result : negative

Species : Mouse, male and female  
Application Route : Ingestion  
Exposure time : 18 month(s)  
Result : negative

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

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### Reproductive toxicity

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

#### Components:

##### **Sulfentrazone:**

Effects on fertility

: Test Type: Two-generation study  
Species: Rat, male and female  
Application Route: Oral  
General Toxicity Parent: NOEL: 13,7 - 16,2 mg/kg bw/day  
General Toxicity F1: NOEL: 13,7 - 16,2 mg/kg bw/day  
Symptoms: Maternal effects.

Effects on fetal development

: Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Oral  
General Toxicity Maternal: NOEL: 25 mg/kg bw/day  
Developmental Toxicity: NOEL: 10 mg/kg bw/day  
Method: EPA OPP 83-3

Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Oral  
General Toxicity Maternal: LOAEL: 50 mg/kg bw/day  
Developmental Toxicity: LOAEL F1: 25 mg/kg bw/day  
Symptoms: Skeletal malformations.  
Target Organs: spleen  
Method: EPA OPP 83-3

##### **toluene:**

Effects on fetal development

: Species: Rat  
Application Route: Inhalation  
Result: Teratogenic effects.  
Remarks: Adverse developmental effects were observed

Reproductive toxicity - Assessment

: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

##### **1,2-benzisothiazol-3(2H)-one:**

Effects on fertility

: Species: Rat, male  
Application Route: Ingestion  
General Toxicity Parent: NOAEL: 18,5 mg/kg body weight  
General Toxicity F1: NOAEL: 48 mg/kg body weight  
Fertility: NOAEL: 112 mg/kg bw/day  
Symptoms: No effects on reproduction parameters.  
Method: OPPTS 870.3800  
Result: negative

Reproductive toxicity - Assessment

: Weight of evidence does not support classification for reproductive toxicity

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### STOT-single exposure

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

#### Components:

##### **Sulfentrazone:**

Remarks : No significant adverse effects were reported

##### **toluene:**

Assessment : May cause drowsiness or dizziness.

### STOT-repeated exposure

May cause damage to organs (hematopoietic system, Nervous system) through prolonged or repeated exposure.

#### Components:

##### **Sulfentrazone:**

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

##### **toluene:**

Routes of exposure : Inhalation  
Target Organs : inner ear  
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

### 1,2-benzisothiazol-3(2H)-one:

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

### Repeated dose toxicity

#### Components:

##### **Sulfentrazone:**

Species : Rat, male  
NOAEL : 19,9 mg/kg  
LOAEL : 65,8 mg/kg  
Application Route : Oral - feed  
Exposure time : 90-days  
GLP : yes  
Target Organs : hematopoietic system

Species : Mouse, male  
NOAEL : 60 mg/kg  
LOAEL : 108,4 mg/kg  
Application Route : Oral - feed  
Exposure time : 90-days  
Target Organs : hematopoietic system

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Species : Dog, male  
NOAEL : 10 mg/kg  
LOAEL : 28 mg/kg  
Application Route : Oral - feed  
Exposure time : 90-days  
Target Organs : hematopoietic system, Liver

### **toluene:**

Species : Rat  
NOAEL : 625 mg/kg  
Application Route : Oral  
Symptoms : central nervous system effects

Species : Rat  
NOAEL : 0,098 mg/l  
Application Route : Inhalation  
Test atmosphere : vapor

Species : Rat  
LOAEL : 2,261 mg/l  
Application Route : Inhalation  
Test atmosphere : vapor

### **1,2-benzisothiazol-3(2H)-one:**

Species : Rat, male and female  
NOAEL : 15 mg/kg  
Application Route : Ingestion  
Exposure time : 28 d  
Method : OECD Test Guideline 407  
Symptoms : Irritation

Species : Rat, male and female  
NOAEL : 69 mg/kg  
Application Route : Ingestion  
Exposure time : 90 d  
Symptoms : Irritation, Reduced body weight

### **Aspiration toxicity**

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

### **Components:**

#### **Sulfentrazone:**

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

### **toluene:**

May be fatal if swallowed and enters airways.

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### Neurological effects

#### Components:

##### **Sulfentrazone:**

Neurotoxicity observed in animals studies

### Further information

#### Product:

Remarks : No data available

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): 88,39 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 200 mg/l  
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EyC50 (Pseudokirchneriella subcapitata (algae)): 0,04 - 0,06 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- ErC50 (Pseudokirchneriella subcapitata (algae)): 0,05 - 0,14 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- Toxicity to soil dwelling organisms : 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.
- LC50 (Eisenia fetida (earthworms)): > 1.000 mg/kg  
Exposure time: 14 d  
Method: OECD Test Guideline 207
- Toxicity to terrestrial organisms : (Apis mellifera L.): > 200 µg/bee  
End point: Acute contact toxicity  
Method: OECD Test Guideline 214
- Ecotoxicology Assessment**
- Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

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### Components:

#### **Sulfentrazone:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Method: EPA OPP 72-1
- LC50 (Lepomis macrochirus (Bluegill sunfish)): 93,8 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)): 60,4 mg/l  
Exposure time: 48 h  
Test Type: flow-through test
- NOEC (Daphnia magna (Water flea)): 14,1 mg/l  
Exposure time: 48 h  
Test Type: flow-through test
- Toxicity to algae/aquatic plants : EC50 (algae): 32,8 mg/l  
Exposure time: 72 h
- EC50 (Pseudokirchneriella subcapitata (green algae)): 0,031 mg/l  
Exposure time: 120 h
- EC50 (Lemma gibba (duckweed)): 0,0288 mg/l  
Exposure time: 14 d
- EC50 (Navicula pelliculosa (Diatom)): 0,042 mg/l  
Exposure time: 120 h
- Toxicity to fish (Chronic toxicity) : NOEC (Fish): 5,9 mg/l  
Exposure time: 21 d
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Crustaceans): 0,51 mg/l  
Exposure time: 21 d
- Toxicity to terrestrial organisms : LD50 (Anas platyrhynchos (Mallard duck)): > 5.620 ppm  
End point: Acute oral toxicity
- NOEL (Anas platyrhynchos (Mallard duck)): 3.160 ppm  
End point: Acute oral toxicity
- LD50 (Colinus virginianus (Bobwhite quail)): > 5.620 ppm  
End point: Acute oral toxicity
- NOEL (Colinus virginianus (Bobwhite quail)): 5.620 ppm  
End point: Acute oral toxicity
- NOEL (Colinus virginianus (Bobwhite quail)): > 100 ppm  
End point: Reproduction Test

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NOEL (Anas platyrhynchos (Mallard duck)): > 100 ppm  
End point: Reproduction Test

LD50 (Apis mellifera (bees)): > 25 µg/bee  
End point: Acute oral toxicity

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

### Ecotoxicology Assessment

- Acute aquatic toxicity : Very toxic to aquatic life.
- Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.
- toluene:**
- Toxicity to fish : LC50 (Fish): 5,5 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50: 3,78 mg/l  
Exposure time: 48 h
- Toxicity to algae/aquatic plants : NOEC (Skeletonema costatum (marine diatom)): 10 mg/l  
Exposure time: 72 h
- Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus kisutch (coho salmon)): 1,4 mg/l
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia sp.): 0,74 mg/l  
Exposure time: 7 d
- Toxicity to microorganisms : EC50 (Bacteria): 134 mg/l  
Exposure time: 3 h

### 1,2-benzisothiazol-3(2H)-one:

- Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 16,7 mg/l  
Exposure time: 96 h  
Test Type: static test
- LC50 (Oncorhynchus mykiss (rainbow trout)): 2,15 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,9 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0,070 mg/l  
Exposure time: 72 h

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Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,04 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 10

Toxicity to microorganisms : EC50 (activated sludge): 24 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209

EC50 (activated sludge): 12,8 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209

### Persistence and degradability

#### Product:

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

#### Components:

##### **Sulfentrazone:**

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life (DT50): 2,22 - 9,56 h

Photodegradation : Remarks: Decomposes rapidly in contact with light.

##### **toluene:**

Biodegradability : Result: Readily biodegradable.

#### **1,2-benzisothiazol-3(2H)-one:**

Biodegradability : Result: rapidly biodegradable  
Method: OECD Test Guideline 301C

### Bioaccumulative potential

#### Product:

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

Remarks: No data available

#### Components:

##### **Sulfentrazone:**

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Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
GLP: yes  
Remarks: Low potential for bioaccumulation

Partition coefficient: n-octanol/water : Pow: 9,8  
pH: 7

### **toluene:**

Bioaccumulation : Bioconcentration factor (BCF): 90

Partition coefficient: n-octanol/water : log Pow: 2,73 (20 °C)

### **1,2-benzisothiazol-3(2H)-one:**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Bioconcentration factor (BCF): 6,62  
Exposure time: 56 d  
Method: OECD Test Guideline 305  
Remarks: Substance is not persistent, bioaccumulative, and toxic (PBT).

Partition coefficient: n-octanol/water : log Pow: 0,7 (20 °C)  
pH: 7  
  
log Pow: 0,99 (20 °C)  
pH: 5

### **Mobility in soil**

#### **Product:**

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

#### **Components:**

#### **Sulfentrazone:**

Mobility : Medium: Water  
Remarks: Predicted distribution to environmental compartments

Distribution among environmental compartments : Koc: 43 ml/g, log Koc: 1,63  
Remarks: Highly mobile in soils

Stability in soil : Remarks: Very persistent in soil.

### **1,2-benzisothiazol-3(2H)-one:**

Distribution among environmental compartments : Koc: 9,33 ml/g, log Koc: 0,97  
Method: OECD Test Guideline 121  
Remarks: Highly mobile in soils

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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.

## 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 : It is prohibited to reuse, bury, burn or sell packaging.
- Washable packaging: Triple wash packs of less than 20 liters and pressure wash packs of 20 liters or more. Triple Wash (Manual Wash): Completely empty the contents of the package into the sprayer tank, keeping it in an upright position for 30 seconds; Add clean water to the package up to ¼ of its volume; Cover the package well and shake it for 30 seconds; Pour the wash water into the spray tank; Do this operation three times; Make the plastic or metal packaging unusable by perforating the bottom.
- Pressure wash: Fit the empty package in the appropriate place of the funnel installed on the sprayer; Activate the mechanism to release the water jet; Direct the water jet to all the inside walls of the package, for 30 seconds; Wash water must be transferred to the sprayer tank; Make the plastic or metal packaging unusable by perforating the bottom. In both procedures, puncture the container at its base without damaging the label. Within a period of up to one year from the date of purchase, the user must return the empty packaging, with lid, to the establishment where the product was purchased or to the place indicated on the invoice, issued at the time of purchase. Activate the mechanism to release the water jet. Direct the water jet to all the inside walls of the package, for 30 seconds. Wash water must be transferred to the sprayer tank. Make the plastic or metal packaging unusable by perforating the bottom.

## SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

UN number

Proper shipping name

: UN 3082

: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

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N.O.S. (Sulfentrazone)

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.  
(Sulfentrazone)

Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964

### IMDG-Code

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S. (Sulfentrazone)

Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

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

Not applicable for product as supplied.

### Domestic regulation

#### ANTT

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S. (Sulfentrazone)

Class : 9  
Packing group : III  
Labels : 9  
Hazard Identification Number : 90

### 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.

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### SECTION 15. REGULATORY INFORMATION

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

Law No. 14,785 of December 27, 2023. Decree 4,074 of January 4, 2002 and its regulatory standards. ANTT Resolution No. 5,998/22 of November 3, 2022. This MSDS was prepared in accordance with the criteria of ABNT NBR 14725. The user is recommended to pay attention to local regulations.

National List of Carcinogenic Agents for Humans - : Not applicable  
(LINACH)

Brazil. List of chemicals controlled by the Federal Police : Not applicable

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

TCSI	: Not in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components that are not on the Canadian DSL nor NDSL.  Sulfentrazone  Sulfurous acid, monosodium salt, reaction products with cre-sol-formaldehyde-nonylphenol polymer
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

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### SECTION 16. OTHER INFORMATION

Revision Date	: 19.05.2025
Date format	: dd.mm.yyyy

#### **Full text of other abbreviations**

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ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
BR BEI	: Brazil. NR7. Parameters for Biological Control of Occupational Exposure to Some Chemical Agents
BR OEL	: Brazil. NR 15 - Unhealthy activities and operations
ACGIH / TWA	: 8-hour, time-weighted average
BR OEL / LT	: Up to 48 hours /week

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

### Disclaimer

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