

SAFETY DATA SHEET



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Version	Revision Date:	SDS Number:	Date of last issue: -
4.0	23.06.2025	50000347	Date of first issue: 16.05.2017

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : AUTHORITY®

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 : Fungicide

Restrictions on use : Use as recommended by the label.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with ABNT NBR 14725 Standard

Acute toxicity (Oral) : Category 5

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 5

Specific target organ toxicity - : Category 3 (Respiratory system)
single exposure

Short-term (acute) aquatic : Category 1
hazard

Long-term (chronic) aquatic : Category 1
hazard

GHS label elements in accordance with ABNT NBR 14725 Standard

Hazard pictograms :



Signal Word : WARNING

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Hazard Statements : H303 + H313 May be harmful if swallowed or in contact with skin.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P261 Avoid breathing mist or vapors.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
Response:
P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
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.
P391 Collect spillage.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
azoxystrobin (ISO)	131860-33-8	Acute Tox. (Inhalation), 4 Acute Tox. (Dermal), 5 Aquatic Acute, 1 Aquatic Chronic, 1	≥ 10 -< 20
Flutriafol	76674-21-0	Acute Tox. (Oral), 4 Acute Tox. (Inhalation), 5 STOT SE, (Respiratory system) , 3 Aquatic Acute, 3 Aquatic Chronic, 2	≥ 10 -< 20

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Fatty acids, coco, polymers with glycerol and phthalic anhydride	67746-02-5	Acute Tox. (Oral), 5 Acute Tox. (Dermal), 5	$\geq 1 - < 5$
Residues, petroleum, catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts	68425-94-5	Serious eye damage/eye irritation, 2A Aquatic Acute, 3 Aquatic Chronic, 3	$\geq 2,5 - < 5$
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	$\geq 0,025 - < 0,1$

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 : 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 give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : May be harmful if swallowed or in contact with skin.
Harmful if inhaled.
May cause respiratory irritation.
Contains a triazole. Symptoms may include nausea, vomiting, diarrhea, visual changes, hallucinations, rash, itching, and alopecia.
- Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

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| Suitable extinguishing media | : Dry chemical, CO ₂ , 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.
Hydrogen fluoride
Nitrogen oxides (NO _x)
Carbon oxides
Fluorinated compounds
Hydrogen cyanide |
| 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. |
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SECTION 6. ACCIDENTAL RELEASE MEASURES

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|---|---|
| Personal precautions, protective equipment and emergency procedures | : Use personal protective equipment.
Ensure adequate ventilation. |
| 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. |
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SECTION 7. HANDLING AND STORAGE

- | | |
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| Advice on protection against fire and explosion | : Normal measures for preventive fire protection. |
| Advice on safe handling | : Avoid formation of aerosol.
Do not breathe vapors/dust. |

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Avoid exposure - obtain special instructions before use.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.

- 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.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
- 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

Contains no substances with occupational exposure limit values.

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.
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state : liquid

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Color	:	beige
Odor	:	characteristic
Odor Threshold	:	No data available
pH	:	7,65 (ca. 20 °C) Concentration: 10 g/l
Melting point/ range	:	No data available
Boiling point/boiling range	:	96,4 °C
Flash point	:	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	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1,097 g/cm ³ (ca. 20 °C)
Solubility(ies) Water solubility	:	Miscible
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, dynamic	:	125,8 mPa.s Method: OECD Test Guideline 114
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive

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Oxidizing properties	: Non-oxidizing
Surface tension	: 38,32 mN/m, 10 g/l, ca. 25 °C
Molecular weight	: Not applicable
Metal corrosion rate	: Not corrosive to metals.

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.
Hazardous decomposition products	: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

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

Product:

Acute oral toxicity	: LD50 (Rat): > 2.000 mg/kg Method: OECD Test Guideline 423 Symptoms: apathy Assessment: The component/mixture is minimally toxic after single ingestion. Remarks: no mortality
Acute inhalation toxicity	: LC50 (Rat): > 2,61 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Symptoms: respiratory tract irritation, apathy Assessment: The component/mixture is moderately toxic after short term inhalation. Remarks: no mortality LC50 (Rat, male and female): > 1,015 mg/l

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Exposure time: 4 h
 Test atmosphere: dust/mist
 Symptoms: Breathing difficulties, epistaxis (bloody nose)
 Remarks: no mortality

Acute dermal toxicity : LD50 (Rat, male and female): > 4.000 mg/kg
 Method: OECD Test Guideline 402
 Assessment: The component/mixture is minimally toxic after single contact with skin.
 Remarks: no mortality

Components:

azoxystrobin (ISO):

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

Acute inhalation toxicity : LC50 (Rat, male and female): 1,84 - 2,11 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: OECD Test Guideline 403
 Symptoms: Breathing difficulties, Fatality

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
 Method: OECD Test Guideline 402
 GLP: yes
 Assessment: The component/mixture is minimally toxic after single contact with skin.
 Remarks: no mortality

Flutriafol:

Acute oral toxicity : LD50 (Rat, female): 300 - 2.000 mg/kg
 Method: OECD Test Guideline 423
 Target Organs: Liver, Gastrointestinal tract
 Symptoms: Fatality
 GLP: yes
 Assessment: The component/mixture is moderately toxic after single ingestion.

LD50 (Rat, female): 1.030 mg/kg
 Method: OECD Test Guideline 425
 Target Organs: Liver, Gastrointestinal tract
 Symptoms: Breathing difficulties

Acute inhalation toxicity : LC50 (Rat): > 5,2 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: OECD Test Guideline 403
 Symptoms: Fatality, ataxia, Breathing difficulties
 GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
 Method: OECD Test Guideline 402
 GLP: yes

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Remarks: no mortality

LD50 (Rat, male and female): > 5.000 mg/kg

Method: OECD Test Guideline 402

Symptoms: Irritation

GLP: yes

Assessment: The substance or mixture has no acute dermal toxicity

Remarks: no mortality

Fatty acids, coco, polymers with glycerol and phthalic anhydride:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402

Residues, petroleum, catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

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

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 : slight irritation

Components:**azoxystrobin (ISO):**

Species : Rabbit
Assessment : Not classified as irritant
Method : OECD Test Guideline 404
Remarks : Minimal effects that do not meet the threshold for classification.

Flutriafol:

Species : Rabbit
Assessment : Not classified as irritant
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

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Species : Rabbit
Result : No skin irritation

Fatty acids, coco, polymers with glycerol and phthalic anhydride:

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

Residues, petroleum, catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

Remarks : No data available

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

Components:

azoxystrobin (ISO):

Species : Rabbit
Assessment : Not classified as irritant
Method : OECD Test Guideline 405
Remarks : Minimal effects that do not meet the threshold for classification.

Flutriafol:

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

Species : Rabbit
Result : Slight or no eye irritation
Assessment : Not classified as irritant
Method : OECD Test Guideline 405
GLP : yes

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Species	:	Rabbit
Result	:	slight irritation

Fatty acids, coco, polymers with glycerol and phthalic anhydride:

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

Residues, petroleum, catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

Result	:	Eye irritation
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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	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	negative

Components:

azoxystrobin (ISO):

Species	:	Guinea pig
Assessment	:	Not a skin sensitizer.
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.

Flutriafol:

Test Type	:	Magnussen-Kligman test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Assessment	:	Not a skin sensitizer.
Result	:	Animal test did not cause sensitization by skin contact.

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Test Type	: Buehler Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Assessment	: Did not cause sensitization on laboratory animals.
Method	: OECD Test Guideline 406
GLP	: yes

Species	: Guinea pig
Result	: Not a skin sensitizer.

Fatty acids, coco, polymers with glycerol and phthalic anhydride:

Test Type	: Buehler Test
Method	: OECD Test Guideline 406
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
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Genotoxicity in vivo	: Test Type: Micronucleus test Species: Mouse Method: OECD Test Guideline 474 Result: negative
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Germ cell mutagenicity - Assessment	: Test on bacterial cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects.
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Components:

azoxystrobin (ISO):

Genotoxicity in vitro	: Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes
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Genotoxicity in vivo	: Test Type: Micronucleus test Species: Mouse
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Method: OECD Test Guideline 474

Result: negative

Flutriafol:

Genotoxicity in vivo : Test Type: dominant lethal test
 Method: OECD Test Guideline 478
 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:**azoxystrobin (ISO):**

Method : OECD Test Guideline 451
 Result : negative
 Remarks : No significant adverse effects were reported

Method : OECD Test Guideline 453
 Result : negative
 Remarks : No significant adverse effects were reported

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

Flutriafol:

Species : Mouse
Exposure time : 2 Years
NOAEL : 1,2 mg/kg bw/day
Result : negative

Species : Rat
Exposure time : 2 Years
NOAEL : 1 mg/kg bw/day
Result : negative

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

Reproductive toxicity

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

Components:**azoxystrobin (ISO):**

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity
Did not show teratogenic effects in animal experiments.

Flutriafol:

Effects on fertility : Test Type: reproductive and developmental toxicity study
Method: OECD Test Guideline 416
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Method: OECD Test Guideline 414
Result: negative

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

STOT-single exposure

May cause respiratory irritation.

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Product:

Assessment : May cause respiratory irritation.

Components:

azoxystrobin (ISO):

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

Flutriafol:

Assessment : May cause respiratory irritation.

STOT-repeated exposure

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

Components:

azoxystrobin (ISO):

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

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:

azoxystrobin (ISO):

Species : Rat
NOAEL : 21 mg/kg bw/day
Application Route : Oral
Exposure time : 90 d
Remarks : No significant adverse effects were reported

Species : Dog
NOAEL : 50 mg/kg bw/day
Application Route : Oral
Exposure time : 90 d
Remarks : No significant adverse effects were reported

Species : Dog
NOAEL : 25 mg/kg bw/day
Application Route : Oral
Exposure time : 1 yr
Remarks : No significant adverse effects were reported

Flutriafol:

Species : Rat
NOAEL : 13.3 mg/kg bw/day

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Application Route	: Oral - feed
Exposure time	: 90 d
Symptoms	: anemia, Liver effects

Species	: Dog
NOAEL	: 5 mg/kg bw/day
Application Route	: Oral
Exposure time	: 90 d
Symptoms	: blood effects, Liver effects

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:

azoxystrobin (ISO):

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

Flutriafol:

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

Neurological effects

Components:

Flutriafol:

No neurotoxicity observed in animal studies.

Further information

Product:

Remarks	: No data available
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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

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|---|---|---|
| Toxicity to fish | : | LC50 (Danio rerio (zebra fish)): 6,89 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0,37 mg/l
End point: Immobilization
Exposure time: 48 h
Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | EyC50 (Pseudokirchneriella subcapitata (algae)): 0,42 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

ErC50 (Pseudokirchneriella subcapitata (algae)): 3,38 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201 |
| Toxicity to soil dwelling organisms | : | Method: OECD Test Guideline 217
Remarks: No significant adverse effect on Carbon mineralization.

Method: OECD Test Guideline 216
Remarks: No significant adverse effect on Nitrogen mineralization.

LC50 (Eisenia fetida (earthworms)): > 1.000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207 |
| Toxicity to terrestrial organisms | : | LD50 (Coturnix japonica (Japanese quail)): 1.699 mg/kg

LD50 (Apis mellifera (bees)): 282 µg/bee
End point: Acute contact toxicity
Method: OECD Test Guideline 214 |

Components:**azoxystrobin (ISO):**

- | | | |
|---|---|--|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 0,47 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0,259 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

EC50 (Americamysis bahia (mysid shrimp)): 0,055 mg/l
Exposure time: 96 h |

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Toxicity to algae/aquatic plants	:	EC50 (Lemna gibba (duckweed)): 3,2 mg/l Exposure time: 14 d EC50 (Navicula pelliculosa (Diatom)): 0,146 mg/l Exposure time: 72 h NOEC (Navicula pelliculosa (Diatom)): 0,02 mg/l Exposure time: 72 h NOEC (Lemna gibba (duckweed)): 0,8 mg/l Exposure time: 14 d
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0,16 mg/l Exposure time: 28 d Method: OECD Test Guideline 204 NOEC (Pimephales promelas (fathead minnow)): 0,147 mg/l Exposure time: 28 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0,044 mg/l Exposure time: 21 d NOEC (Americamysis bahia (mysid shrimp)): 0,00954 mg/l Exposure time: 28 d
M-Factor (Chronic aquatic toxicity)	:	10
Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): 283 mg/kg Exposure time: 14 d
Toxicity to terrestrial organisms	:	LD50 (Anas platyrhynchos (Mallard duck)): > 1.000 mg/kg LD50 (Colinus virginianus (Bobwhite quail)): > 1.000 mg/kg LD50 (Colinus virginianus (Bobwhite quail)): > 5.200 ppm Remarks: Dietary LD50 (Apis mellifera (bees)): > 200 µg/bee Exposure time: 48 h End point: Acute contact toxicity LD50 (Apis mellifera (bees)): > 25 µg/bee Exposure time: 48 h End point: Acute oral toxicity

Flutriafol:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 33 mg/l
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	Exposure time: 96 h
	LC50 (Danio rerio (zebra fish)): 22,97 mg/l
	Exposure time: 96 h
	Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 67 mg/l
	End point: Immobilization
	Exposure time: 48 h
	Test Type: static test
	Method: OECD Test Guideline 202
	GLP: yes
	EC50 (Daphnia magna (Water flea)): 42,21 mg/l
	End point: Immobilization
	Exposure time: 48 h
	Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: IC50 (Selenastrum capricornutum (green algae)): 12 mg/l
	Exposure time: 96 h
	IC50 (Scenedesmus subspicatus): 1,9 mg/l
	Exposure time: 72 h
	EbC50 (Lemna gibba (duckweed)): 0,65 mg/l
	Exposure time: 7 d
	EyC50 (Pseudokirchneriella subcapitata (algae)): 3,69 mg/l
	Exposure time: 72 h
	Method: OECD Test Guideline 201
	GLP: yes
Toxicity to fish (Chronic toxicity)	: NOEC (Lepomis macrochirus (Bluegill sunfish)): 4,8 mg/l
	Exposure time: 28 d
	NOEC (Danio rerio (zebra fish)): 20 mg/l
	Exposure time: 14 d
	Method: OECD Test Guideline 204
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0,31 mg/l
	Exposure time: 21 d
	NOEC (Daphnia magna (Water flea)): 0,45 mg/l
	Exposure time: 21 d
	Method: OECD Test Guideline 211
Toxicity to soil dwelling organisms	: NOEC (Eisenia fetida (earthworms)): 0.01 mg/cm2
	Exposure time: 180 d
	LC50 (Eisenia fetida (earthworms)): > 1.000 mg/kg
	Exposure time: 14 d
	Method: OECD Test Guideline 207
Toxicity to terrestrial organ-	: LD50 (Apis mellifera (bees)): > 144 µg/bee

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End point: Acute oral toxicity
Method: OECD Test Guideline 213
GLP: yes

LD50 (*Apis mellifera* (bees)): > 150 µg/bee
End point: Acute contact toxicity
Method: OECD Test Guideline 214
GLP: yes

LD50 (*Apis mellifera* (bees)): > 100 µg/bee
End point: Acute contact toxicity
Method: OECD Test Guideline 214

LD50 (*Apis mellifera* (bees)): 872,53 µg/bee
Exposure time: 48 h
End point: Acute oral toxicity
Method: OECD Test Guideline 213

LD50 (*Anas platyrhynchos* (Mallard duck)): > 5.000 mg/kg

LD50 (*Coturnix japonica* (Japanese quail)): ca. 385 mg/kg
Method: US EPA Test Guideline OPPTS 850.2100

LD50 (*Coturnix japonica* (Japanese quail)): 4260 ppm
Method: OPPTS 850.2200

Fatty acids, coco, polymers with glycerol and phthalic anhydride:

Toxicity to fish : LL50 (*Danio rerio* (zebra fish)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

LL50 (*Oncorhynchus mykiss* (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (*Pseudokirchneriella subcapitata* (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (Bacteria): 34 mg/l
Remarks: Based on data from similar materials

Residues, petroleum, catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

Toxicity to fish : LC50 (Zebra fish): > 10 - 100 mg/l

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- Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials
- EC10 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): > 10 - 100 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials
- 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
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

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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

Components:

azoxystrobin (ISO):

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 52,11 d (25 °C) pH: 9

Flutriafol:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Remarks: Does not readily hydrolyze

Fatty acids, coco, polymers with glycerol and phthalic anhydride:

Biodegradability : Biodegradation: 42 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Based on data from similar materials

Residues, petroleum, catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

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

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

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

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

azoxystrobin (ISO):

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 2,5 (20 °C)

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Flutriafol:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 7
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 2,29

Fatty acids, coco, polymers with glycerol and phthalic anhydride:

Partition coefficient: n-octanol/water : log Pow: -4,9

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**Components:****azoxystrobin (ISO):**

Distribution among environmental compartments : Remarks: Under normal conditions the substance has low to moderate mobility in soil.

Flutriafol:

Distribution among environmental compartments : Remarks: Moderately 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

Other adverse effects**Product:**

Additional ecological information : An environmental hazard cannot be excluded in the event of

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mation unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

Components:**Flutriafol:**

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
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**

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UNRTDG

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

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. (Flutriafol, Azoxystrobin)

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. (Flutriafol, Azoxystrobin)

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. (Flutriafol, Azoxystrobin)

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 - (LINACH) : Not applicable

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

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

TCSI	: On the inventory, or in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components that are not on the Canadian DSL nor NDSL. azoxystrobin (ISO) Flutriafol Sulfurous acid, monosodium salt, reaction products with cresol-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

SECTION 16. OTHER INFORMATION

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Full text of other abbreviations

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

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