

SAFETY DATA SHEET



Nanok™ fungicide

Version	Revision Date:	SDS Number:	Date of last issue: 2023/09/27
1.1	2024/04/30	50000347	Date of first issue: 2023/09/27

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Nanok™ fungicide

Recommended use of the chemical and restrictions on use

Recommended use : Fungicide

Restrictions on use : Use as recommended by the label.

Manufacturer or supplier's details

Company : FMC Agro Philippines, Inc.

Address : Unit 10-A Six/NEO Bldg.,
5th Avenue cor. 26th Street,
1634 Bonifacio Global City, Taguig City
Philippines

Telephone : +63279443400

Telefax : +63279443465

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

National Poison Control Center : U.P. PGH, Padre Faura, Manila (+63) 2 8524 1078
East Avenue, Quezon City (+63) 2 8928 0611
Southern Philippines Medical Center (+63) 82 227 2731
(formerly Davao Medical Center Davao City)

Emergency telephone : For leak, fire, spill or accident emergencies, call:
+(63) 2-395-3308 (CHEMTREC)
Toll-free mobile enabled: 1800 1 322 0553 (CHEMTREC)

Medical emergency:
All other countries: +1 651 / 632-6793 (Collect)

2. HAZARDS IDENTIFICATION

GHS Classification

Carcinogenicity : Category 1A

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1



GHS label elements

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Hazard pictograms :  

Signal Word : Danger

Hazard Statements : H350 May cause cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Flutriafol	76674-21-0	>= 10 -< 20
azoxystrobin (ISO)	131860-33-8	>= 10 -< 20
Sodium alkyl naphthalene sulfonate	68425-94-5	>= 1 -< 10
Quartz (SiO ₂)	14808-60-7	>= 0.1 -< 1
1,2-benzisothiazol-3(2H)-one	2634-33-5	>= 0.0025 -< 0.025

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Remove to fresh air.

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- If unconscious, place in recovery position and seek medical advice.
If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.
- In case of skin contact : If on clothes, remove clothes.
If on skin, rinse well with water.
Wash off with soap and plenty of water.
Get medical attention immediately if irritation develops and persists.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Do not induce vomiting without medical advice.
- Most important symptoms and effects, both acute and delayed : None known.
May cause cancer.
- Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.
- Notes to physician : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- 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 (NOx)
Carbon oxides
Fluorinated compounds
Hydrogen cyanide
Sulfur oxides
- 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

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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 : Never return spills in original containers for re-use.
Mark the contaminated area with signs and prevent access to unauthorized personnel.
Only qualified personnel equipped with suitable protective equipment may intervene.

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 : Normal measures for preventive fire protection.

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapors/dust.
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.

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

Further information on storage conditions : The product is stable under normal conditions of warehouse storage.
Protect from frost and extreme heat.
Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present.

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A hand wash station should be available.

Recommended storage temperature : 5 - 30 °C

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
Quartz (SiO ₂)	14808-60-7	TWA (Respirable dust)	250 mppcf / %SiO ₂ +5	PH OEL
		TWA (Respirable dust)	10 mg/m ³ / %SiO ₂ +2	PH OEL
		TWA (Total dust)	30 mg/m ³ / %SiO ₂	PH OEL
		TWA (Respirable particulate matter)	0.025 mg/m ³ (Silica)	ACGIH

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. Always have on hand a first-aid kit, together with proper instructions.
Wear suitable protective equipment.
When using do not eat, drink or smoke.
In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

Hygiene measures : Avoid contact with skin, eyes and clothing.

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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	: light brown
Odor	: slight, ammoniacal
Odor Threshold	: No data available
pH	: 5.6 (20 °C) Concentration: 1 % 6.2 (20 °C) (undiluted)
Melting point/freezing point	: not determined
Boiling point/boiling range	: not determined
Flash point	: 101 °C Method: Seta closed cup
Evaporation rate	: No data available
Flammability (liquids)	: ignitable, Based on available information, the classification criteria for flammability hazard are not met.
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	: No data available
Relative density	: 1.107
Density	: 1.0976 g/cm ³ (20 - 20.3 °C)

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Solubility(ies)	
Water solubility	: Miscible
Partition coefficient: n-octanol/water	: Not available for this mixture.
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: 1,372 mPa.s (20 °C)
Viscosity, kinematic	: Non-newtonian fluid: viscosity is dependent on shear rate. 1239 mm2/s (20 °C) 1127 mm2/s (40 °C)
Explosive properties	: Not explosive
Oxidizing properties	: Non-oxidizing
Molecular weight	: Not applicable
Particle size	: Not applicable

10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: No decomposition if stored and applied as directed.
Possibility of hazardous reactions	: No decomposition if stored and applied as directed.
Conditions to avoid	: Protect from frost, heat and sunlight. Avoid extreme temperatures. Avoid formation of aerosol.
Incompatible materials	: Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	: Nitrogen oxides (NOx) Carbon oxides Fluorine compounds Sulfur oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

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

Product:

Acute oral toxicity	: LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 425
Acute inhalation toxicity	: LC50 (Rat): > 2.61 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 (Rat, male and female): > 4,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

Components:

Flutriafol:

Acute oral toxicity	: LD50 (Rat, male): 1,140 mg/kg LD50 (Rat, female): 1,480 mg/kg
Acute inhalation toxicity	: LC50 (Rat): > 5.2 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403
Acute dermal toxicity	: LD50 (Rat): > 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

azoxystrobin (ISO):

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	: LC50 (Rat, female): 0.69 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402

Sodium alkyl naphthalene sulfonate:

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg
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Quartz (SiO₂):

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	: LC50 (Rat): > 5.01 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 436 Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Based on data from similar materials
Acute dermal toxicity	: LD50 (Rabbit): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity Remarks: Based on data from similar materials

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

Acute oral toxicity	: LD50 (Rat, male and female): 490 mg/kg Method: OECD Test Guideline 401
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

Not classified based on available information.
Not classified due to lack of data.

Product:

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

Components:

Flutriafol:

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

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

Sodium alkyl naphthalene sulfonate:

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Remarks : No data available

Quartz (SiO₂):

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

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

Not classified based on available information.

Not classified due to lack of data.

Product:

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

Components:

Flutriafol:

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

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

Sodium alkyl naphthalene sulfonate:

Result : Eye irritation

Quartz (SiO₂):

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

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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

Not classified based on available information.

Skin sensitization

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

Respiratory sensitization

Not classified based on available information.

Respiratory sensitization

Not classified due to lack of data.

Product:

Test Type	:	Buehler Test
Routes of exposure	:	Dermal
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.

Components:

Flutriafol:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Not a skin sensitizer.

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

azoxystrobin (ISO):

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

Quartz (SiO₂):

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse

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Method : OECD Test Guideline 429
Result : Does not cause skin sensitization.
Remarks : Based on data from similar materials

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

Not classified based on available information.

Not classified due to lack of data.

Product:

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

Components:

Flutriafol:

Genotoxicity in vivo : Test Type: dominant lethal test
Method: OECD Test Guideline 478
Result: negative

Quartz (SiO₂):

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Rat
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

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

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	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

Not classified based on available information.
May cause cancer.

Product:

Carcinogenicity - Assessment	: Contains no ingredient listed as a carcinogen
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Components:

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.
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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

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

Quartz (SiO₂):

Carcinogenicity - Assessment : Human carcinogen.

Reproductive toxicity

Not classified based on available information.
Not classified due to lack of data.

Product:

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

Components:

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

azoxystrobin (ISO):

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

STOT-single exposure

Not classified based on available information.
Not classified due to lack of data.

Product:

Remarks : No significant adverse effects were reported

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Components:

Flutriafol:

Remarks : No significant adverse effects were reported

azoxystrobin (ISO):

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

STOT-repeated exposure

Not classified based on available information.

Not classified due to lack of data.

Components:

azoxystrobin (ISO):

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

Quartz (SiO₂):

Routes of exposure : Inhalation

Target Organs : Lungs

Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Routes of exposure : Inhalation

Target Organs : Immune system, Kidney

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:

Flutriafol:

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

azoxystrobin (ISO):

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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

Quartz (SiO₂):

Species : Rat
LOAEC : 0.0025 mg/l
Application Route : Inhalation
Exposure time : 90 day
Method : OECD Test Guideline 413
Target Organs : Lungs
Remarks : Based on data from similar materials

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

Not classified based on available information.

Not classified due to lack of data.

Product:

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

Components:

Flutriafol:

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

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azoxystrobin (ISO):

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	: LC50 (Danio rerio (zebra fish)): 6.89 mg/l Exposure time: 96 h Remarks: Based on data from a similar product.
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0.37 mg/l Exposure time: 48 h Remarks: Based on data from a similar product.
Toxicity to algae/aquatic plants	: EC50 (Pseudokirchneriella subcapitata (green algae)): 3.38 mg/l Exposure time: 72 h Remarks: Based on data from a similar product.
Toxicity to soil dwelling organisms	: LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg Exposure time: 14 d Remarks: Based on data from similar materials
Toxicity to terrestrial organisms	: LD50 (Coturnix japonica (Japanese quail)): 1,700 mg/kg Remarks: Based on data from similar materials LD50 (Apis mellifera (bees)): 283 µg/bee Exposure time: 48 h End point: Acute contact toxicity Remarks: Based on data from similar materials

Components:

Flutriafol:

Toxicity to fish	: LC50 (Lepomis macrochirus (Bluegill sunfish)): 33 mg/l Exposure time: 96 h
Toxicity to daphnia and other	: EC50 (Daphnia magna (Water flea)): 67 mg/l

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aquatic invertebrates	End point: Immobilization Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 GLP: yes
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
Toxicity to fish (Chronic toxicity)	: NOEC (Lepomis macrochirus (Bluegill sunfish)): 4.8 mg/l Exposure time: 28 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0.31 mg/l Exposure time: 21 d
Toxicity to soil dwelling organisms	: NOEC (Eisenia fetida (earthworms)): 0.01 mg/cm2 Exposure time: 180 d
Toxicity to terrestrial organisms	: LD50 (Apis mellifera (bees)): > 144 µg/bee 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 (Anas platyrhynchos (Mallard duck)): > 5,000 mg/kg
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)): 0.28 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 EC50 (Americamysis bahia (mysid shrimp)): 0.055 mg/l Exposure time: 96 h
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

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		NOEC (<i>Navicula pelliculosa</i> (Diatom)): 0.02 mg/l Exposure time: 72 h
		NOEC (<i>Lemna gibba</i> (duckweed)): 0.8 mg/l Exposure time: 14 d
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (<i>Oncorhynchus mykiss</i> (rainbow trout)): 0.16 mg/l Exposure time: 28 d Method: OECD Test Guideline 204
		NOEC (<i>Pimephales promelas</i> (fathead minnow)): 0.147 mg/l Exposure time: 28 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (<i>Daphnia magna</i> (Water flea)): 0.044 mg/l Exposure time: 21 d
		NOEC (<i>Americamysis bahia</i> (mysid shrimp)): 0.00954 mg/l Exposure time: 28 d
M-Factor (Chronic aquatic toxicity)	:	10
Toxicity to soil dwelling organisms	:	LC50 (<i>Eisenia fetida</i> (earthworms)): 283 mg/kg Exposure time: 14 d
Toxicity to terrestrial organisms	:	LD50 (<i>Anas platyrhynchos</i> (Mallard duck)): > 1,000 mg/kg
		LD50 (<i>Colinus virginianus</i> (Bobwhite quail)): > 1,000 mg/kg
		LD50 (<i>Colinus virginianus</i> (Bobwhite quail)): > 5,200 ppm Remarks: Dietary
		LD50 (<i>Apis mellifera</i> (bees)): > 200 µg/bee Exposure time: 48 h End point: Acute contact toxicity
		LD50 (<i>Apis mellifera</i> (bees)): > 25 µg/bee Exposure time: 48 h End point: Acute oral toxicity

Sodium alkyl naphthalene sulfonate:

Toxicity to fish	:	LC50 (<i>Zebra fish</i>): > 10 - 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 (<i>Daphnia magna</i> (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials

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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

Quartz (SiO₂):

Toxicity to fish : LC50 (*Cyprinus carpio* (Carp)): > 10,000 mg/l
Exposure time: 72 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
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

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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: Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:

Flutriafol:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Remarks: Does not readily hydrolyze

azoxystrobin (ISO):

Biodegradability : Result: Not readily biodegradable.

Stability in water : Remarks: The product is insoluble and sinks in water.

Sodium alkyl naphthalene sulfonate:

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

Quartz (SiO₂):

Biodegradability : Result: Not 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.

Components:

Flutriafol:

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

Partition coefficient: n-octanol/water : log Pow: 2.29

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azoxystrobin (ISO):

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 2.5 (20 °C)

Quartz (SiO₂):

Bioaccumulation : Remarks: Does not bioaccumulate.

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:

Flutriafol:

Distribution among environmental compartments : Remarks: Moderately mobile in soils

Stability in soil : Remarks: Very persistent in soil.

azoxystrobin (ISO):

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

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Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Do not re-use empty containers.
Packaging that is not properly emptied must be disposed of as the unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

International Regulations

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
Environmentally hazardous : yes

IMDG-Code

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

Class : 9
Packing group : III

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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.

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

Priority Chemical List (PCL) : Not applicable

Chemical Control Order (CCO) : 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.
azoxystrobin (ISO)
Agalmatolite
(RS)-2,4'-DIFLUORO-A-(1H-1,2,4-TRIAZOL-1-YLMETHYL)BENZHYDRYL ALCOHOL
mixture of polyorganosiloxanes and fillers

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

16. OTHER INFORMATION

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Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
PH OEL : Philippines. Threshold Limit Values For Airborne Contaminants

ACGIH / TWA : 8-hour, time-weighted average
PH OEL / TWA : Threshold limit for airborne contaminants

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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