



MATERIAL SAFETY DATA SHEET

MONSTER 10% FS

IDENTIFICATION OF THE SUPPLIER:

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PRODUCT IDENTIFICATION:

Common Name: Fludioxonil
Trade Name: MONSTER 10% FS
Uses category: fungicide
Type of formulation: Fungicide Seed Treatment (FS)
Chemical Name: 4-(2,2,2-difluoro-1,3-benzodioxol-4-yl)pyrrole-3-carbonitrile
Chemical Formula: C₁₂H₆F₂N₂O₂
Molecular Weight: 248.2

PRODUCT COMPOSITION:

Active Ingredient:	% w/v	CAS #
Fludioxonil	10%	[131341-86-1]

Inert ingredient: up to 1 liter



HAZARDS IDENTIFICATION:

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards which do not result in classification

None known.

FIRST-AID MEASURES:

General advice

Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

If inhaled

Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.

In case of skin contact

Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.

If swallowed

If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.

Most important symptoms and effects, both acute

Nonspecific
No symptoms known or expected.





and
delayed

Notes to physician

There is no specific antidote available.
Treat symptomatically.

FIRE-FIGHTING MEASURES: -

Suitable extinguishing media

Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam or W water spray

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards during fire fighting

As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.

Specific extinguishing methods

Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

Special protective equipment for firefighters

Wear full protective clothing and self-contained breathing apparatus.

Hazchem Code

•3Z

ACCIDENTAL RELEASE:

Environmental precautions

Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.



If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations .
Clean contaminated surface thoroughly.
Clean with detergents. Avoid solvents.
Retain and dispose of contaminated wash water.

PERSONAL PROTECTION/SAFTETY:

Components	CAS-No.	Control parameters
Fludioxonil (ISO)	131341-86-1	5 mg/m ³

Engineering measures

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.

Where necessary, seek additional occupational hygiene advice.



Personal protective

Respiratory protection

No personal respiratory protective equipment normally required.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand protection

Remarks

No special protective equipment required.

Eye protection

No special protective equipment required.

Skin and body protection

No special protective equipment required.
Select skin and body protection based on the physical job requirements.

Protective measures

The use of technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.

Personal protective equipment should comply with relevant national standards

HANDLING AND STORAGE:

Advice on safe handling

No special protective measures against fire required.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.

Conditions for safe storage

No special storage conditions required.
Keep containers tightly closed in a dry, cool and well ventilated place.
Keep out of the reach of children.
Keep away from food, drink and animal feedingstuffs.





STABILITY AND REACTIVITY:

Reactivity	None reasonably foreseeable.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	No decomposition if used as directed.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are known.

PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	suspension
Colour	light red to dark red
Odour	characteristic
Odour Threshold	No data available
pH	7.7 Concentration: 100 % w/v
Melting point/range	No data available
Boiling point/boiling range	No data available
Flash point	Method: Pensky-Martens closed cup does not flash
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper explosion limit / Upper flammability limit	No data available
Density	1.077 g/cm ³





Auto-ignition temperature	615 °C
Surface tension	28.5 mN/m, 20 °C
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Surface tension	28.5 mN/m, 20 °C
Viscosity	
Viscosity, dynamic	59.3 - 441 mPa.s (20 °C) 45.5 - 343 mPa.s (40 °C)
Viscosity, kinematic	No data available

TOXICOLOGICAL INFORMATION:

Exposure routes	Ingestion Inhalation Skin contact Eye contact
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Acute toxicity

Product:

Acute oral toxicity LD50 (Rat, female): > 2,000 mg/kg Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity LC50 (Rat, male and female): > 4.37 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity LD50 (Rat, male and female): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal toxicity

Components:

fludioxonil (ISO):





Acute oral toxicity

LD50 (Rat, male and female): > 5,000 mg/kg

Acute inhalation toxicity

LC50 (Rat, male and female): > 2.6 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity

LD50 (Rat, male and female): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

Species

Rabbit

Result

No skin irritation

Components:

fludioxonil (ISO):

Species

Rabbit

Result

No skin irritation

Serious eye damage/eye irritation

Product:

Species

Rabbit

Result

No eye irritation

Components:

fludioxonil (ISO):





Species Rabbit
Result No eye irritation

Respiratory sensitisation or skin

Product:

Test Type : Buehler Test

Species : Guinea pig

Result : Did not cause sensitisation on laboratory animals.

Components:

fludioxonil (ISO):

Species : Guinea pig

Result : Did not cause sensitisation on laboratory animals.

ECOLOGICAL INFORMATION: -

Ecotoxicity

Product:

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)): 6.2 mg/l

Exposure time: 96 h

Toxicity to daphnia and other EC50 (Daphnia magna Straus): 10 mg/l

aquatic invertebrates

Exposure time: 48 h

Toxicity to algae/aquatic ErC50 (Raphidocelis subcapitata (freshwater green alga)): 10 mg/l



plants

Exposure time: 96 h

NOEC (*Raphidocelis subcapitata* (freshwater green alga)): 0.64 mg/l

End point: Growth rate

Exposure time: 96 h

Components:

fludioxonil (ISO):

Toxicity to fish

LC50 (*Oncorhynchus mykiss* (rainbow trout)): 0.23 mg/l

Exposure time: 96 h

LC50 (*Pimephales promelas* (fathead minnow)): 0.7 mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 (*Daphnia magna* (Water flea)): 0.4 mg/l

Exposure time: 48 h

EC50 (*Americamysis*): 0.27 mg/l

Exposure time: 96 h

Toxicity to algae/aquatic plants

ErC50 (*Raphidocelis subcapitata* (freshwater green alga)): 0.259 mg/l

Exposure time: 96 h

EC10 (*Raphidocelis subcapitata* (freshwater green alga)): 0.077 mg/l

End point: Growth rate

Exposure time: 96 h

ErC50 (*Skeletonema costatum* (marine diatom)): 0.43 mg/l



Exposure time: 96 h

NOEC (Skeletonema costatum (marine diatom)): 0.14 mg/l

End point: Growth rate

Exposure time: 96 h

Toxicity to fish (Chronic toxicity)

NOEC (Oncorhynchus mykiss (rainbow trout)): 0.04 mg/l

Exposure time: 28 d

NOEC (Pimephales promelas (fathead minnow)): 0.018 mg/l

Exposure time: 116 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

NOEC (Daphnia magna (Water flea)): 0.035 mg/l

Exposure time: 21 d

NOEC (Americamysis): 0.018 mg/l

Exposure time: 28 d

Toxicity to microorganisms

EC50 (activated sludge): > 1,000 mg/l

Exposure time: 3 h

Persistence and degradability

Components:

fludioxonil (ISO):

Biodegradability

Result: Not readily biodegradable.

Stability in water

Degradation half life: 450 - 700 d

Remarks: Persistent in water.

Bioaccumulative potential





Components:

fludioxonil (ISO):

Bioaccumulation

Remarks: Does not bioaccumulate.

Partition coefficient: n

log Pow: 4.12 (25 °C)

octanol/
Water

Mobility in soil

Components:

fludioxonil (ISO):

Distribution among environmental compartments

Remarks: immobile

Stability in soil

Dissipation time: 14 d

Percentage dissipation: 50 % (DT50)

Remarks: Product is not persistent.

Other adverse effects

Components:

fludioxonil (ISO):

Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).



DISPOSAL CONSIDERATIONS:

Disposal methods

Waste from residues

Do not contaminate ponds, waterways or ditches with chemical or used container.

Do not dispose of waste into sewer.

Where possible recycling is preferred to disposal or incineration.

If recycling is not practicable, dispose of in compliance with local regulations..

Contaminated packaging

Non-returnable containers:

Triple rinse containers.

Add rinsings to spray tank

If recycling, replace cap and return clean containers to recycler or designated collection point.

Empty containers can be landfilled, when in accordance with the local regulations.

If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

Returnable containers:

Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.





TRANSPORT INFORMATION:

International Regulations

UNRTDG

UN number UN 3082

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (FLUDIOXONIL)

Class 9

Packing group III

Labels 9

IATA-DGR

Class 9

Packing group III

UN/ID No. : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(FLUDIOXONIL)