



MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

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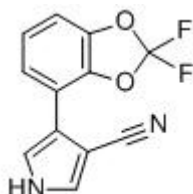
1. Chemical Product Identification

Product Name: Fludioxonil 98% TC

Molecular Formula: C₁₂H₆F₂N₂O₂

Molecular Weight: 248.19 g/mol

Structural Formula:



Chemical Name: 4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile

Form: Crystal

Colour: White

CAS No.: 131341-86-1

2. Composition / Information On Ingredients

Composition	Chemical name	Content (% w/w)
Active ingredient	Fludioxonil	98%
Other ingredient	-----	2%

3. Hazards Identification



Slight hazard to health but harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. First Aid Measures

Eye: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye.

Skin: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes.

Ingestion: If swallowed: Call a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Notes to Physician: There is no specific antidote if this product is ingested. Treat symptomatically.

5. Fire-Fighting Measures

Fire Fighting Procedures: Firefighters should wear full protective gear, including self-contained breathing apparatus. If possible and without risk, remove intact containers from exposure to fire. Otherwise, spray unopened containers with water to keep cool. Whenever possible, contain fire-fighting water by bunding area with sand or earth to prevent it entering any bodies of water.

Hazardous combustion products: Thermal decomposition products may include carbon monoxide, carbon dioxide and certain oxides of nitrogen.

Extinguishing Media: Dry chemical extinguisher, foam, carbon dioxide.

Stability and Reactivity: Stable under normal conditions of use. No dangerous reaction known under normal conditions of use. Avoid extreme heat and fire. Toxic thermal decomposition products may include oxides of carbon and oxides of nitrogen.

6. Accidental Release Measures

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and eye protection to prevent skin and eye contact. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation.



Procedures for dealing with release or spill: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition. Spillages or uncontrolled discharges into watercourses must be alerted to the regulatory body.

7. Handling And Storage

Handling: wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Storage: Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Do not store in or around the home. Store in a location inaccessible to children and pets.

8. Exposure Controls/personal protection

Exposure standards: No occupational exposure standards have been established for the product or its ingredients.

Engineering controls: This product is intended for use outdoors where engineering controls are not necessary. If necessary, ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

Personal Protective Equipment:

Eyes: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Skin: Where contact is likely, wear chemical-resistant gloves (such as nitrile or butyl), coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

Respiratory: A respirator is not normally required when handling this substance.



9. Physical And Chemical Properties

Appearance: White Crystal

Moisture: $\leq 0.5\%$

Acetone insoluble: $\leq 0.5\%$

Density: 1.54 g/ml

Melting Point: 199.8°C

Boiling point: Decomposes before boiling

Partition Coefficient: $\log P = 4.12$ (at pH 7, 20°C)

Vapour pressure: 3.9×10^{-4} mPa (25°C)

Solubility: 1.8 mg/L in water (20°C); In organic solvents: acetone 190, octanol 20, toluene 2.7, methanol 42 (all in g/l, 20°C).

10. Stability And Reactivity

Chemical stability: Stable under normal conditions of use.

Hazardous polymerisation: Will not occur

Conditions to avoid: Extreme heat and fire

Incompatible materials: None

Hazardous decomposition products: Thermal decomposition may produce toxic by-products of carbon and nitrogen.

11. Toxicological Information

Acute oral LD50 (rat): > 5000 mg/kg

Acute dermal LD50 for rats: > 2000 mg/kg

Acute inhalation toxicity: LC50 (4h) for rat: > 2.6 mg/l.

Skin irritation: Non-Irritating (Rabbit)

Eye irritation: Slightly irritating (Rabbit)

Skin Sensitization: Non-sensitive (Guinea Pig)

12. Ecological And Ecotoxicological Information

Effect on birds: Acute oral LD50 (8 d) for Bobwhite quail is > 2000 mg/kg.

Effect on fish: Acute LC50 (96 h) for Rainbow trout is 0.23 mg/l. Effects on aquatic invertebrates: Acute EC50 (48 h) for Daphnia magna is 0.4 mg/l.



Effects on algae: Acute 72 hour EC50 for *Scenedesmus subspicatus* is 0.024 mg/l.

Effects on bees: contact acute 48 hour LD50 is >100 µg/bee, oral acute 48 hour LD50 is >100 µg/bee.

Effects on earthworms: Acute 14 day LC50 is \geq 1000 mg/kg

13. Disposal Considerations

Triple or (preferably) pressure rinse containers before disposal. Add rinsings to the spray tank. Do not dispose of undiluted chemicals on-site. If recycling replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. 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.

14. Transport Information

Not applicable

15. Regulatory Information

Not applicable

16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.