

# SAFETY DATA SHEETS

According to the UN GHS revision 10

## 1: Identification

### 1.1 GHS Product identifier

Product name Fluometuron

### 1.2 Other means of identification

Product number 2164-17-2

Other names Fluometuron

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

Identified uses Industrial and scientific research use.

Uses advised against no data available

### 1.4 Supplier's details

Company Zhongshan Greenrock Technology Co., Ltd.

Address No. 138, Jinsan Avenue, Sanjiao Town, Zhongshan City, Guangdong Province, China

Telephone +86-2087066781

### 1.5 Emergency phone number

Emergency phone number +86-2087066781

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## 2: Hazard identification

### 2.1 Emergency Overview

Low-risk substances usually cause only mild irritation or discomfort. Under normal handling conditions, they are unlikely to pose a significant risk to human health or the environment. However, basic safety precautions must be followed.

### 2.2 GHS Classification

Acute toxicity, oral : Category 4

Hazardous to the aquatic environment, acute hazard : Category 1

Hazardous to the aquatic environment, long-term hazard : Category 1

### 2.3 GHS label elements, including precautionary statements

**Pictogram(s)****Signal word**

Warning

**Hazard statement(s)**

H302 Harmful if swallowed

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

**Precautionary statement(s)****Prevention**

P264 Wash hands [and ...] thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

**Response**

P330 Rinse mouth.

P391 Collect spillage.

P301+P317 IF SWALLOWED, Get medical help.

**Storage**

no data available

**Disposal**

P501 Dispose of contents/container to ...

## 2.4 Physical and chemical

The physical and chemical hazards are low, and they are non-flammable, non-explosive, and non-corrosive. Some substances may be slightly flammable or irritating, but the risk is low.

## 2.5 Health hazards

May cause mild skin or eye irritation, such as redness and itching. Inhalation or ingestion of small amounts may cause temporary discomfort, but no serious or long-term health effects. No special medical treatment is generally required.

## 2.6 Environmental hazards

It has a low impact on the environment and is only slightly toxic to aquatic organisms and terrestrial ecosystems. Under normal disposal conditions, it will not cause significant environmental pollution and is highly biodegradable.

## 2.7 Other hazards which do not result in classification

no data available

# 3: Composition/information on ingredients

## 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Fluometuron	Fluometuron	2164-17-2	685-665-0	99%

## 4: First-aid measures

### 4.1 General advice

Stop contact immediately and rinse the contact area with clean water; if symptoms are mild (such as skin redness, eye stinging), rest and observe; if symptoms persist or worsen, seek medical attention and carry the material SDS

### 4.2 If inhaled

Move to a ventilated place and breathe fresh air deeply; if a mild cough occurs, drink plenty of warm water to relieve it, no special treatment is required

### 4.3 In case of skin contact

Rinse with running water for 5-10 minutes. If itching occurs, apply anti-allergic ointment; avoid scratching

### 4.4 In case of eye contact

Rinse with clean water for 5 minutes and apply artificial tears; if discomfort persists, go to an ophthalmologist for treatment.

### 4.5 If swallowed

If a small amount is accidentally ingested (such as a mild irritant), drink plenty of water to promote excretion; seek medical attention if nausea occurs, and do not induce vomiting on your own.

### 4.6 Most important symptoms and effects, both acute and delayed

Mild redness and itching of the skin, brief stinging of the eyes, and a mild cough; no long-term health effects.

### 4.7 Protection of first-aiders

Rescuers need to wear ordinary gloves and goggles; no special heavy equipment is required, and they can just wash their hands after contact.

### 4.8 Notes to physician

Inform your doctor of the substance type (e.g., mild irritant, aquatic hazard); treat symptomatically (e.g., anti-allergic, anti-inflammatory); no special treatment is required.

## 5: Fire-fighting measures

### 5.1 Unsuitable extinguishing media

Mild irritants: No special contraindications, avoid using fire extinguishing agents that are incompatible with the substance (such as using alkali when encountering acid); Aquatic hazardous substances: Avoid using fire extinguishing agents that pollute water bodies (such as phosphorus-containing foam)

### 5.2 Specific hazards during fire fighting

The risk of combustion is low, mostly small local fires that are not easy to spread; some substances release slightly irritating gases (such as acetic acid) when burned, which have little impact on health; if the wastewater from fire extinguishing of aquatic hazardous substances enters the water body, it may harm aquatic life.

### **5.3 Hazardous combustion products**

Carbon dioxide, water vapor, slightly irritating gases (such as sulfur dioxide, acetic acid vapor).

### **5.4 Specific extinguishing methods**

For small areas: use dry powder/water to extinguish the fire (if compatible), and use wet cleaning for dust (to prevent dust); for large areas: use foam/water to extinguish the fire, and collect the fire extinguishing wastewater at the same time (to prevent water pollution); after extinguishing the fire, ventilate to dilute the residual gas.

### **5.5 Special protective equipment for fire-fighters**

Wear anti-static work clothes, nitrile gloves, and goggles; wear a dust mask when working with dust; no special heavy equipment is required, and maintain good ventilation during operation.

## **6: Accidental release measures**

### **6.1 Protective measures for workers**

Wear chemical protective clothing (resistant to corresponding chemicals), chemical protective gloves, and goggles; wear a gas mask (organic vapor filter cartridge) for volatile substances; avoid skin contact.

### **6.2 Environmental protection measure**

Set up waterproof cofferdams to prevent leaks from entering rivers/farmland; use oil-absorbing cotton/adsorbents to intercept leaks that have already entered the water body; take samples from contaminated water bodies for testing and assess the ecological impact.

### **6.3 Containment methods for leaked chemicals**

Collect liquids in water-resistant containers (to prevent rain); collect solids in chemical-resistant bags (to prevent rain erosion); and store them in rain-proof and seepage-proof areas after collection.

### **6.4 Cleanup methods for chemical spills**

Small leakage: absorb with aquatic protective adsorption materials; large leakage: transfer to storage tank with corrosion-resistant pump; cleaning water is collected and treated, and direct discharge is prohibited.

### **6.5 Measures to prevent the spread of leaks**

Designate a 10-meter isolation zone and monitor the drainage outlet; add a rain shelter on rainy days; and set up monitoring points in downstream water bodies.

### **6.6 Container leakage treatment**

Minor leaks: seal with waterproof sealant; serious leaks: move to a rainproof area, have professionals handle it, and reuse the container after passing inspection.

### **6.7 Special considerations**

Do not discharge leaked materials/cleaning water directly into water bodies; use phosphorus-free detergents; report the leak to the environmental protection department after treatment.

## **7: Handling and storage**

### **7.1 Safe storage conditions**

Store in a normally ventilated warehouse (natural ventilation or mechanical ventilation, air changes ? 2 times/hour); the container should be ordinary plastic or glass (such as polyethylene bottles, glass bottles) with a sealed lid; the warehouse floor should be ordinary cement with no special anti-corrosion requirements; equipped with basic fire-fighting equipment (such as fire extinguishers, fire sand).

### **7.2 Storage precautions**

Store materials by category (e.g. liquids and solids separated) to avoid confusion; clearly mark the substance name and H code on container labels; check containers for damage monthly and clean up minor leaks immediately; eating and drinking are prohibited in the warehouse, and hands must be washed after work.

### **7.3 VCI Storage Grade**

Level 4 (lowest): Metal containers do not require additional VCI protection and can be stored normally. The humidity in the warehouse is ?70%, which prevents slight rust on ordinary metals without affecting their use. For long-term storage (over 6 months), the dust on the surface of the container needs to be wiped off.

### **7.4 Recommended storage temperature**

10-35?, store at room temperature; avoid extreme temperatures (below -5? or above 40?); deliquescent substances (such as certain salts) should be stored in a dry place with a desiccant (such as silica gel) and replaced regularly (if the label has a recommended storage temperature, follow the label).

### **7.5 Handling**

For precautions see Safety Data Sheet section 2  
Advice on safe handling : Work under hood. Do not inhale substance/mixture.

## **8: Exposure controls/personal protection**

### **8.1 Respiratory protection**

When exposed to slightly irritating dust (such as talcum powder) or vapor (such as acetic acid), wear an ordinary dust mask; a respirator is not necessary when ventilation is good.

### **8.2 Recommended Filter type**

For dust, choose Type P1 filter cotton; for slight organic vapor, choose Type A1 filter cartridge; no composite filtration is required, basic protection is sufficient.

### 8.3 Eye/face protection

Wear ordinary impact-resistant goggles with resin lenses. Wear protective glasses when handling liquids to avoid splashing.

### 8.4 Skin and body protection

Wear ordinary work clothes (cotton or chemical fiber) and wear a waterproof apron when handling liquids to prevent clothes from getting wet.

### 8.5 Hand protection

Wear nitrile or latex gloves with a thickness of  $\geq 0.2$ mm and replace them promptly after use to avoid damage.

### 8.6 Hygiene measures

Wash your hands with soap and running water after work. If your skin becomes red or itchy, apply moisturizer. Do not rub your eyes with your hands. Wash your clothes normally; no special disinfection requirements are required.

## 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	white crystals or powder
<b>Colour</b>	White crystals
<b>Odour</b>	Odorless
<b>Melting point/freezing point</b>	-93°C(lit.)
<b>Boiling point or initial boiling point and boiling range</b>	176°C(lit.)
<b>Flammability</b>	no data available
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	62°C(lit.)
<b>Auto-ignition temperature</b>	no data available
<b>Decomposition temperature</b>	When heated to decomposition it emits very toxic fumes of /hydrogen fluoride and nitrogen oxides/.
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	In water:Slightly soluble.
<b>Partition coefficient n-octanol/water</b>	log Kow= 2.42

<b>Vapour pressure</b>	5e-07 mm Hg at 20°C
<b>Density and/or relative density</b>	1.39
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

## 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

STABLE

### 10.3 Possibility of hazardous reactions

FLUOMETURON is a trifluoromethyl urea derivative. May react with hypochlorites to form nitrogen trichloride which explodes spontaneously in air [J. Am. Chem. Soc. 63:3530-32]. May react with azo and diazo compounds to generate toxic gases. Reacts with strong reducing agents to form flammable gases.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /hydrogen fluoride and nitrogen oxides/.

## 11: Toxicological information

### 11.1 Acute toxicity

Oral: LD50 Rat oral 6416-8900 mg/kg

Inhalation: no data available

Dermal: LD50 Rat percutaneous >2000 mg/kg

### 11.2 Skin corrosion/irritation

no data available

### 11.3 Serious eye damage/irritation

no data available

#### **11.4 Respiratory or skin sensitization**

no data available

#### **11.5 Germ cell mutagenicity**

no data available

#### **11.6 Carcinogenicity**

Cancer Classification: Group C Possible Human Carcinogen

#### **11.7 Reproductive toxicity**

no data available

#### **11.8 STOT-single exposure**

no data available

#### **11.9 STOT-repeated exposure**

no data available

#### **11.10 Aspiration hazard**

no data available

## **12: Ecological information**

### **12.1 Toxicity**

Toxicity to fish: LC50 *Salmo gairdneri* (Rainbow trout) 3.0 mg/l/96 hr @ 12°C (95% confidence interval 2.0- 4.5 mg/l), wt 0.7 g. Static bioassay without aeration, pH 7.2-7.5, water hardness 40-50 mg/l as calcium carbonate and alkalinity of 30-35 mg/l.

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### **12.2 Persistence and degradability**

The 3-trifluoromethyl moiety of fluometuron seems to be accessible to some extent to biochemical transformation reactions. A slight but measurable amount of radioactivity (< 5% of the dose applied) evolved as carbon dioxide during the 52 day observation period on incubation of the (14)C trifluoromethyl-labeled herbicide in soils. Oxidation of the trifluoromethyl carbon represents a minor pathway of degradation for fluometuron in the soil.

### **12.3 Bioaccumulative potential**

An estimated BCF of 15 was calculated for fluometuron(SRC), using a log Kow of 2.42 (1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low. However, in a study of unicellular green algae (*Chlorella fusca*), a log BCF of 1.96(4) was determined for fluometuron, corresponding to a BCF of 91.2 and

indicating a moderate potential for bioconcentration in algae.

## 12.4 Mobility in soil

Experimental Koc values for fluometuron in soil range from 29 to 173(1-6). This range of the Koc values indicate that fluometuron would have very high to moderate mobility in soil(7). Soil thin layer chromatography studies confirm that fluormeturon adsorbs weakly to moderately to soil based on experimental Rf values determined in 13 soils (organic matter 0.36-10.26%) ranging from 0.17 to 0.89(8-10). The Koc for fluometuron ranges from 29 to 200 for various soil types (including sandy and loam soils)(11). It is moderately leachable in all but very sandy soils; the Koc value range from 31 to 117 (8 soil types); Kd = 0.15 to 1.13(12). The adsorption of fluometuron increases with increases in organic content(13,14) and clay content of soil(14).

## 12.5 Other adverse effects

no data available

# 13: Disposal considerations

## 13.1 Disposal methods for waste chemicals

It can be disposed of as ordinary industrial waste or recycled by a qualified unit. Liquid substances can be neutralized to a neutral pH before discharge (subject to compliance with local environmental protection standards). Solid substances can be safely landfilled or incinerated. After cleaning, the container can be recycled as ordinary waste.

## 13.2 Precautions

Before disposal, the characteristics of the substance must be confirmed to avoid misjudging the risk level. Mildly irritating substances must be strictly separated from food-grade waste. The disposal process must comply with local environmental regulations. Small amounts of residue can be rinsed with water, and the rinse water must be treated. Records of the amount and destination of disposal must be kept for at least three years.

# 14: Transport information

## 14.1 UN Number

ADR/RID: UN2050

IMDG: UN2050

IATA: UN2050

## 14.2 UN Proper Shipping Name

ADR/RID: DIISOBUTYLENE,  
ISOMERIC COMPOUNDS

IMDG: DIISOBUTYLENE,  
ISOMERIC COMPOUNDS

IATA: DIISOBUTYLENE,  
ISOMERIC COMPOUNDS

## 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

## 14.4 Packing group, if applicable

ADR/RID: II

IMDG: II

IATA: II

## 14.5 Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

## 14.6 Special precautions for user

no data available

## 14.7 Transport in bulk according to IMO instruments

no data available

## 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Fluometuron	Fluometuron	2164-17-2	685-665-0
New Zealand Inventory of Chemicals (NZIoC)			Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Not Listed.
Australian Inventory of Industrial Chemicals (AIIC)			Not Listed.
Catalogue of Strictly Restricted Toxic Chemicals in China			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
European INventory of Existing Commercial chemical Substances			Not Listed.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			Listed.
TSCA Inventory of Chemical Substances			Listed.

## 16: Other information

### Information on revision

SDS Creation Date July 1, 2025

SDS Revision Date July 1, 2025

### Abbreviations and acronyms in SDS

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods

- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### SDS References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Any questions regarding this Safety Data Sheet, Please send your inquiry to [sales@MolBest.com](mailto:sales@MolBest.com)**

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