

SAFETY DATA SHEETS

Oxyfluorfen 97%TC

No.: 121006

Version: 4

Date: April, 2022

SECTION 1: IDENTIFICATION

Product identifier	Oxyfluorfen 97%TC
Other means of identification	N/A
Recommended use	Herbicide
Supplier's details	Jiangsu Heben Biochemical Co., Ltd No 20, Second Haibin Road, Yangkou Chemical Area Phase II, Rudong, Jiangsu, P.R.China
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SECTION 2: HAZARDS IDENTIFICATION

2.1 GHS classification of the substance or mixture (Ninth Revised Edition, 2021)

Physical hazards	None	None
Health hazards	Acute toxicity, Oral, Category 5	H303
	Acute toxicity, Dermal, Category 5	H313
	Acute toxicity, Inhalation, Category 4	H332
Environmental hazards	Acute aquatic toxicity, Category 1	H400
	Chronic aquatic toxicity, Category 1	H410

2.2 GHS label elements, including precautionary statements

Hazard pictograms



Signal word

Warning

Hazard statement (s)

H303

May be harmful if swallowed

H313

May be harmful in contact with skin

H332

Harmful if inhaled

H400

Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Prevention statements

P261 Avoid breathing dust/fume/gas/mist vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.

Response statements

P301+P317 If swallowed: Get medical help.
P302+P317 If on skin: Get medical help.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing
P371 Get medical help.
P391 Collect spillage.

Storage statements

None;

Disposal statements

P501 Dispose of container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Common name, synonyms	Chemical identity	CAS number and other unique identifiers	The concentrations of the ingredients
Oxyfluorfen	2-chloro- α,α,α -trifluoro-p-toy 1 3-ethoxy-4-nitrophenyl ethyl (IUPAC)	CAS No.: 42874-03-3; EC No.: 255-983-0	$\geq 97.0\%$
Other non-hazardous ingredients			$< 3.0\%$

SECTION 4: FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

Skin: Remove contaminated clothes. Rinse and then wash skin with plenty of water for 15 minutes. Refer for medical attention.

Eyes: Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

Inhalation: Move affect person to fresh air and keep at rest until recovered. If not breathing, give

artificial respiration and get to a doctor.

Ingestion: Do not induce vomiting if the person is conscious. Give glass of water. Get to a doctor.

4.2 Most important symptoms/effects, acute and delayed

Symptoms of overexposure include decreased activity, tearing eyes, bleeding from the nose and in coordination.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

No antidote, no special treatment, please treat it symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media

SMALL FIRE: Dry chemical, CO₂, water spray or regular foam. LARGE FIRE: Water spray, fog or regular foam. Do not scatter spilled material with high-pressure water streams. Move containers from fire area if you can do it without risk.

5.2 Specific hazards arising from the chemical

Some may burn but none ignite readily. Containers may explode when heated. Some may be transported hot.

5.3 Special protective equipment for firefighters

Wear self-contained breathing apparatus and protective suit.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

In the event of major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including face mask, face shield and gauntlets. All skin areas should be covered. Though launder protective clothing before storage or re-use. Stop leak is safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labeled containers for recycling or salvage.

6.2 Environmental precautions

After spills, wash area, preventing runoff from entering drains.

6.3 Methods and materials for containment and cleaning up

As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids. SPILL: Increase, in the downwind direction, as necessary, the isolation distance shown above. FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2016)

If a spill occurs, clean it up promptly. Don't wash it away. Instead, sprinkle the spill with sawdust, vermiculite, or kitty litter. Sweep it into a plastic garbage bag, and dispose of it as directed on the pesticide product label.

(Information from "pubchem" web)

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid direct or prolonged contact with skin and eyes. Do not breathe dust. Do not breathe mists. Do not ingest. It is recommended that wear full protective clothing including face mask, face shield and gauntlets, all skin areas should be covered, when handling this product.

Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. And take a bath or wash hands completely with soap after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Please store in a cool, dry and well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Contain no substances with occupational exposure limit values.

8.2 Appropriate engineering controls

Use only in an enclosed system. Use local exhaust ventilation. Safely shower.

8.3 Individual protection measures

Industrial hygiene: Remove and wash contaminated clothing promptly. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

Personal protective equipment

Respiratory protection:

For splash, mist or spray exposures wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

Protective gloves: Neoprene gloves;

Eye protection: For splash, mist or spray exposure, wear chemical protective goggles or a face shield.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid
Color	White to orange or red-brown
Odor	With a smoke-like odor
Melting point / freezing point	84.5 ~ 86.0 °C (99.2%)
Boiling point or initial boiling point and boiling range	Decomposition was observed before boiling occurred (99.8%)
Flammability	Not flammable. (99.2%)
Lower and upper explosion limit/ flammability limit	Not applicable for solids;

Flash point	Not applicable for solids;
Auto-ignition temperature	Not applicable for solids;
Decomposition temperature	Decomposition was observed before boiling occurred (99.8%)
pH	6.0~8.0
Kinematic viscosity	Not applicable for solids;
Solubility	In water 0.116 mg/L (Unbuffered water at 25 °C , 99.1%). Readily soluble in most organic solvents.
Partition coefficient n-octanol/water (log value)	K_{ow} logP=4.86 at 18°C in unbuffered water and 99.2%purity
Vapour pressure	2.6×10^{-5} Pa at 25°C (99.2%)
Density and/or relative density	1.35 at 73 °C
Relative vapor density	Not applicable for solids;
Particle characteristics	Not known;

9.2 Other information

Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No reactivity under normal conditions.

10.2 Chemical stability

This product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

No dangerous reactions known.

10.4 Conditions to avoid

Avoid fire, feed, food and beds of water.

10.5 Incompatible materials

Not compatible with strong oxidizing agents.

10.6 Hazardous decomposition products

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

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity	Acute oral LD ₅₀ for rats >5000 mg/kg Acute inhalation LC ₅₀ (4 h) for rats >3.71 mg/l Acute percutaneous LD ₅₀ for rats >5000 mg/kg
Skin corrosion/irritation	Not irritant to skin (Rabbit)

Serious eye damage/irritation	Not irritant to eyes. (Rabbit)
Respiratory or skin sensitization	Non-sensitising.
Germ cell mutagenicity	No genotoxic potential.
Carcinogenicity	NOAEL for carcinogenicity 3.0 mg/kg bw/day), Carcinogenic Cat 3, R40“limited evidence of a carcinogenic effect”
Reproductive toxicity	Relevant parental NOAEL: 6.8 mg/kg bw/day (M/F) parental toxicity Relevant offspring NOAEL: 20 mg/kg bw/day (females) Relevant reproductive NOAEL: 91 mg/kg bw/day (males)
STOT-single exposure	No available data.
STOT-repeated exposure	No available data.
Aspiration hazard	Non-irritant.
Further information	The Acceptable Daily Intake (ADI) is 0.003mg/kg bw/day, based on the NOAELs of the long term toxicity study in mice, with a Safety Factor (SF) of 100.

Data in the above table is from EFSA Journal 2010;8(11):1906, Peer Review of the pesticide risk assessment of the active substance oxyfluorfen.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Eco-toxicity

Birds	Acute oral LD ₅₀ for bobwhite quail >2150 mg/kg. Dietary LC ₅₀ (8 d) for mallard ducks and bobwhite quail >5000 ppm;
Fish	LC (96 h) for bluegill sunfish 0.2, trout 0.41, channel catfish 0.4 mg/l; Chronic 21 day NOEC 0.038mg/L;
Daphnia	LC ₅₀ (48 h) 1.8 mg a.i./l; Aquatic invertebrates - Chronic 21 day NOEC (mg/l) 0.013.
Algae	EC ₅₀ (72 h) >2.0 mg/l; Chronic 96 hour NOEC, growth (mg/l)2.0.
Bees	Contact acute LD ₅₀ (worst case from 24, 48 and 72 hour values - µg bee ⁻¹)> 100; Oral acute LD ₅₀ (worst case from 24, 48 and 72 hour values - µg bee ⁻¹) > 100;

Worms LC₅₀ (14 d) for *Eisenia foetida* >500 mg/kg.
Earthworms - Chronic NOEC, reproduction: 12.0 mg/kg;
Above data is from BCPC, e-The Pesticide Manual and PPDB.

12.2 Persistence and degradability

Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 8.2×10^{-7} atm-cu m/mole. A half-life of 7 days in estuarine sediment indicates that biodegradation may be an important environmental fate. If released into water, oxyfluorfen is expected to adsorb to suspended solids and sediment based upon the estimated Koc. Oxyfluorfen had a biodegradation half-life of 27.5 days in estuarine water and 17 days in estuarine sediment. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant.

12.3 Bio-accumulative potential

An estimated BCF of 880 was calculated in fish for oxyfluorfen(SRC), using a log Kow of 4.73 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is high, provided the compound is not metabolized by the organism(SRC).

Bio-concentration factor BCF (L/kg)1637, CT₅₀ (days) 6.

12.4 Mobility in soil

If released to soil, oxyfluorfen is expected to have no mobility based upon an estimated Koc of 8900. The Koc of oxyfluorfen is estimated as 8900(SRC), using a log Kow of 4.73 and a regression-derived equation. According to a classification scheme, this estimated Koc value suggests that oxyfluorfen is expected to be immobile in soil(SRC).

12.5 Other adverse effects

None

Above data is from pubchem.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Product

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.

13.2 Contaminated packaging

Non-returnable containers that held this material should be cleaned, prior to disposal, by triple rinsing. Containers which held this material may be cleaned by being triple rinsed, and recycled, with the

rinsate being incinerated. Do not cut or weld metal containers. Vapors that form may create an explosion hazard.

SECTION 14: TRANSPORT INFORMATION

IMDG

UN number: 3077

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (Oxyfluorfen).

Transport hazard class: 9

Packing group: III

Environmental hazards: Marine pollutant.

Special precautions for user: None.

Transport in bulk according to IMO instruments: Not known;

SECTION 15: REGULATORY INFORMATION

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

WHO-classification: U (Unlikely to present an acute hazard)

This product is not subject to any prohibitions or restrictions in China.

SECTION 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 produces formulations containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.