

Oxyfluorfen -MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

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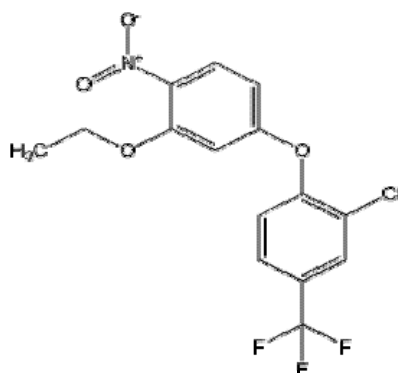
1. Chemical Product Identification

Product Name: Oxyfluorfen

Molecular Formula: C₁₅H₁₁O₄N₁F₃Cl

Molecular Weight: 361.70

Structural Formula:



Chemical Name: 2-Chloro- α , α , α -trifluoro-p-totyl-3-ethoxy-4-nitrophenyl ethyl

Form: powder

Color: slight yellow

Odor: odorless

CAS No.: 42874-03-3

2. Composition / Information on Ingredients

Composition	CAS No.	Content %
Oxyfluorfen	42874-03-3	95.0
Other ingredients		5.0

3. Hazards Identification

Ingredient (purity): 95% Min

Volume percent: None

TLV PPM: None

TLV mg/M³: None

LEL: None

4. First Aid Measures

If swallowed: call a poison control center or doctor immediately for treatment advice. Have 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.

If on skin or clothing: take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

If inhaled: move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control centre or doctor for further treatment advice.

Note to physician: contains petroleum distillate; vomiting may cause aspiration pneumonia. Symptoms of exposure through inhalation or ingestion include headache, dizziness, nausea, vomiting and cramps. Symptoms from eye or skin contact include irritation. Remove victim from area of exposure. Wash off remaining material with plenty of water. Product mucosal damage may contraindicate the use of gastric lavage. Treat symptomatically and give supportive therapy. There is no specific antidote.

5. Fire-Fighting Measures

Extinguishing Media: Chemical foam, CO₂, dry chemicals or sandy soil

Unusual fire and explosion hazards: The substance presents no explosive. The substance does not belong to flammable solid.

Special fire fighting procedures: Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

6. Accidental Release Measures

Precautions to be taken in handling and storing: Store in a cool, well-ventilated, area, Keep away from ignition sources, heat and flame. Store in a tightly closed container.

Other precautions: Do not take internally. Handle with due care. Avoid unnecessary contact.

7. Handling And Storage

Storage: Store in original container, preferably in a locked area, away from children, food, feed.

8. Exposure Controls/Personal Protection

Respiratory protection: Wear impervious protective clothing.

Ventilation: Filtering gas mask.

Protective gloves: Rubber gloves.

Eye protective: Chemicals safety goggles.

Other protective equipment: waterproof boots, long-sleeved shirt, long pants and hat

9. Physical and Chemical Properties

Appearance and odor: slight yellow powder

Solubility: 0.1 mg/L @ 25°C in water

Specific gravity (water=1): Not applicable

Bulk density: 1.35 @ 73 °C

Vapour pressure: 0.267 mPa @ 25°C

PH: 6.0-9.0

Melting point : 84-85 °C

Boiling point : 250-300 °C

Flash point : 93.35 °C

Partition Coefficient: 4.4683

Adsorption Coefficient: 100,000 (estimated)

10. Stability and Reactivity

Stability: Stable

Conditions to avoid: None

Incompatibility (Materials to avoid): Oxidants and food.

Hazardous decomposition products: Burning may yield carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride.

Hazardous polymerization: will not occur.

Conditions to avoid: None

11. Toxicological Information

Acute toxicity: Oxyfluorfen is practically nontoxic by ingestion, with reported oral LD50 values of 5000 mg/kg in both rats and dogs, and 2700 to 5000 mg/kg in mice. The dermal LD50 is greater than 5000 mg/kg in both rats and rabbits, also indicating slight toxicity by this route. It causes no skin irritation in rabbits, no skin sensitization in guinea pigs, and moderate eye irritation in rabbits. However, Goal and other formulations may show severe skin and eye irritant properties, and may be skin sensitizers. The 4-hour inhalation LC50 for the technical product is not available, but that for Goal 1.6E is greater than 22.64 mg/L, indicating practically no toxicity via this route

Reproductive effects: In a developmental study with rats given doses of 10, 100, or 1000 mg/kg/day by gavage, decreased implantation, increased resorption, and lower fetal survival was seen at the 1000 mg/kg level. Toxic effects on the mothers were also seen at this dose. At 5 mg/kg/day, there was decreased survival of fetuses and decreased maternal and fetal weights. It does not appear likely that oxyfluorfen will cause reproductive effects in humans at likely levels of exposure

Teratogenic effects: In a developmental study with rabbits, 30 mg/kg/day, the highest dose tested, produced an increase in fused sternal bones in the fetuses as well as toxic effects on the mothers. These data suggest oxyfluorfen may have teratogenic effects, but only at very high doses.

Mutagenic effects: Mutagenicity tests on rats, mice and on bacterial cell cultures have produced mixed results. However, unscheduled DNA synthesis assays have been negative. Due to the conflicting results, it is not possible to determine the mutagenic potential of oxyfluorfen.

Carcinogenic effects: In a 20-month study with mice fed 0.3, 3, or 30 mg/kg/day, doses at and above 3 mg/kg/day produced non-significant increases in both benign and malignant liver tumors in male mice. No increased tumor formation was seen in female mice at any dose. No carcinogenic effects were observed in a 23-year study with rats fed doses 2 mg/kg/day, nor in dogs at doses of 3 mg/kg/day. These data suggest that oxyfluorfen is not carcinogenic.

12. Ecological And Ecotoxicological Information

Effects on birds: Oxyfluorfen is practically nontoxic to birds; the reported oral LD50 values are greater than 2200 mg/kg in bobwhite quail, and greater than 4000 mg/kg in mallard duck. The dietary 8-day dietary LC50 values are greater than 5000 ppm in bobwhite quail, and 4000 ppm in mallard ducks. Dietary concentrations as high as 100 ppm had no effect on reproduction in mallards or bobwhite quail.

Effects on aquatic organisms: Oxyfluorfen is highly toxic to aquatic invertebrates, freshwater clams, oysters, aquatic plants, and fish. The reported 96-hour LC50 values are 200 ug/L in bluegill sunfish, 410 ug/L in rainbow trout, 400 ug/L in channel catfish, 150 ug/L in fathead minnow, and 32 ug/L in grass shrimp and oysters. Its 96-hour LC50 in

freshwater clams is 10 ug/L. The 96-hour LC50 for the product Goal 2E in *Daphnia magna*, a small freshwater crustacean, is 1500 ug/L. Oxyfluorfen accumulated up to 13 mg/kg (13,000 ug/kg) in bluegill sunfish exposed to 10 ug/L for 40 days. This represents a bioconcentration factor (BCF) of 1300. The BCF in channel catfish was 700 to 5000 in one 30-day study. These results indicate a low to moderate potential for bioaccumulation in aquatic species.

Effects on other organisms: Oxyfluorfen is nontoxic to honeybees, with a reported oral LC50 of greater than 10,000 ppm.

13. Disposal Considerations

Steps to be taken in case material is released or spilled: Sweep up with spade, place into a dry, clean-lidded container for disposal.

Waste disposal method: Dispose of in accordance with local, state, and federal regulations. Do not put in climate-closed containers.

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.