



Hangzhou Tianlong Biotechnology Co., Ltd.

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MATERIAL SAFETY DATA SHEET

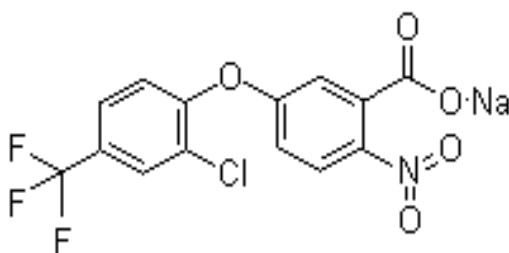
1. Chemical Product Identification

Product Name: Acifluorfen

Molecular Formula: $C_{14}H_7ClF_3NO_5$

Molecular Weight: 361.7

Structural Formula:



Chemical Name: sodium

5-(2-chloro-4-(trifluoromethyl)phenoxy)-2-nitrobenzoate

CAS No.: 50594-66-6

Supplier: HANZHOU TIANLONG BIOTECHNOLOGY CO., LTD

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2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Acifluorfen	50594-66-6	85.0
Other ingredients		15.0

3. Hazards Identification

Danger: Corrosive. Causes irreversible eye damage. Harmful if swallowed, absorbed through skin, or inhaled. Do not get in eyes or on clothing. Avoid contact with skin and breathing vapor or spray mist.

4. First Aid Measures

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 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 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Note to physician: Probable mucosal damage may contraindicate the use of gastric lavage.

5. Fire-Fighting Measures

Flash Point: 210°F

Autoignition Temperature: Not Determined

Extinguishing Media: Use water fog, CO₂, or dry chemical extinguishing media.

Fire and Explosion Hazards: Toxic materials are generated in a fire (hydrogen chloride, hydrogen fluoride, nitrogen oxide).

Special Firefighting Procedures: Firefighters should be equipped with self-contained breathing apparatus and turnout gear.

6. Accidental Release Measures

Action To Take For Spills: Spilled material should be recovered and applied according to label rates whenever possible. If application of spilled material is not possible, then spills should be contained, solidified, and placed in plastic containers for disposal.

7. Handling and Storage

Precautions to Be Taken in Handling and Storage: Protect from freezing.

Maintain above 40°F.

8. Exposure Controls/Personal Protection

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

Exposure Guideline: Sodium Salt of Acifluorfen

Recommendations For Manufacturing, Commercial Blending, and packaging workers:

Eye Protection: Chemical goggles when respirator does not provide eye protection.

Respiratory Protection: Supplied air respirators should be worn if large quantities of vapor or mist are generated or prolonged exposure possible.

Protective Clothing: Gloves, apron, long-sleeved shirt, and long pants to

prevent skin contact. Contains butoxyethanol which is skin absorbed. Avoid all skin contact.

Ventilation: Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Other: Eyewash and safety showers should be easily accessible.

9. Physical and Chemical Properties

Form: Solid

Color: White or brown

Odor: An unusual mild odor.

PH: 8.2

Water Solubility: >250,000 mg/L @ 25°C

Solubility in Other Solvents: acetone v.s.; ethanol v.s.; xylene s.s

Melting Point: 142-167°C

Density : 1.546

Vapor Pressure: 0.133 mPa @ 20°C

Partition Coefficient: 1-1.1761

Adsorption Coefficient: 113 (estimated) (salt)

10. Stability and Reactivity

Stability: Stable

Conditions To Avoid: Avoid freezing temperatures

Incompatibility: Oxidizing agents

Hazardous Decomposition Products: Including but not limited to oxides of carbon, nitrogen, HCl, HF

Hazardous Polymerization: Does not occur

11. Toxicological Information

Toxicological Test Data:

Rat, Oral LD50 = 4790 mg/kg

Rat, Dermal LD50 = 3250 mg/kg

Rat, Inhalation LC50 (4 hr) = 33 mg/L

Rabbit, Skin Irritation – moderately irritating

Rabbit, Eye Irritation – severely irritating

Guinea pig, Dermal Sensitizer – not a sensitizer

Reproductive effects: No adverse effects were observed in rodents or their offspring when the parents were fed daily doses of acifluorfen well below lethal levels. Body weights, food consumption, fertility, and pregnancy were comparable in both treated and untreated animals. However, in another rat study, at higher doses, both parents and offspring suffered kidney lesions and death. This suggests that levels high enough to cause toxicity in the mother are needed to affect reproduction.

Teratogenic effects: Acifluorfen may have teratogenic effects at high doses.

Mutagenic effects: Various mutagenesis assays of acifluorfen products on

both bacteria and mammalian cells indicate that they do not cause mutations.

Carcinogenic effects: One study of mice fed high doses of acifluorfen for 18 months showed decreases in body weight and increases in both benign and malignant liver tumors . These data are not sufficient to characterize the carcinogenicity of acifluorfen .

Organ toxicity: In addition to being a skin and eye irritant, acifluorfen affects the weight and functions of the liver, heart, and kidneys at high doses

12. Ecological Information

Environmental Toxicity Data:

Mallard Duck: LD50 = 4187 mg/kg Rainbow Trout: 96 hr LC50 = 54 mg ai/L
Bobwhite Quail: LC50> 10000 mg/kg Channel Catfish: 96 hr LC50 = 80 mg ai/L

Mallard Duck: LC50> 10000 mg/kg Daphnia magna: 48 hr LC50 = 28 mg ai/L

Bobwhite Quail: No reproductive impairment up to 20 ppm Fiddler Crab: 96 hr LC50> 1000 mg/L

Mallard Duck: No reproductive impairment up to 100 ppm Grass Shrimp: 96 hr LC50 = 189 mg ai/L

Bluegill Sunfish: (static) 96 hr LC50 = 31 mg ai/L Freshwater Clam: 96 hr LC50 = 64 mg ai/L

Bluegill Sunfish: (dynamic) 96 hr LC50> 32 mg ai/L Eastern Oyster: 48 hr EC50 = 31.3 mg ai/L

13. Disposal Considerations

Waste Disposal Method: Incinerate or bury in a licensed facility. Do not discharge into waterways or sewer systems without proper authority.

Disposal Method (Container): Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

14. Transport Information

Class: 9

UN No.: 3077

Packing group: III

15. Regulatory Information

Safe phrase: Keep locked up and out of reach children.

Keep away from food, drink and animal feeding stuffs.

Do not breathe vapour/spray.

Avoid contact with skin and eyes.

Wear suitable protective clothing, gloves and eye/face protection.

Avoid release to the environment.

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.