

According to the UN GHS revision 8

Creation Date: May 01, 2026

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1. IDENTIFICATION

1.1 GHS Product identifier

Product name: Fenitrothion

Catalog Number: T19852

CAS Number: 122-14-5

1.2 Other means of identification

Other names: -

1.3 Recommended use of the chemical and restrictions on use

Identified uses: no data available

1.4 Supplier's details

Company: Targetmol Chemicals Inc.

Address: 34 Washington Street, Wellesley Hills, Massachusetts 02481 USA

Tel/Fax: (781) 999-4286

1.5 Emergency phone number

Emergency phone number: 781-999-4286

Service hours: Monday to Friday, 9am-5pm (Standard timezone: UTC/GMT -5 hours).

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s):



Signal word: Warning

Hazard statement(s):

H302 Harmful if swallowed

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s):

Prevention:

P264 Wash ... thoroughly after handling.

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

P273 Avoid release to the environment.

Response:

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P391 Collect spillage.

Storage:

none

Disposal:

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 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
Fenitrothion	-	122-14-5	204-524-2

4. FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

General advice

no data available

If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Basic Treatment: Establish a patent airway. Suction if necessary. Aggressive airway control may be needed. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary. Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Organophosphates and related compounds

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

This compound is an organophosphate insecticide. It is a highly toxic cholinesterase inhibitor, that acts on the nervous system. Does not cause delayed neurotoxicity and contact produces little irritation. (EPA, 1998)

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Non-Specific -- Organophosphate Pesticide n.o.s.) Move containers from fire area if you can do so without risk. Fight fire from maximum distance. Dike fire control water for later disposal; do not scatter the material. Wear positive pressure breathing apparatus and special protective clothing. This compound is an organophosphate insecticide. Small fires: dry chemical, carbon dioxide, water spray, or foam. Large fires: water spray, fog or foam. (EPA, 1998)

5.2 Specific hazards arising from the chemical

When heated to decomposition, it emits very toxic fumes of oxides of nitrogen, phosphorus and sulfur. Decomposition at 212-284F produces a mixture of organophosphorus polymers. Unstable in alkaline media. Stable for 2 years if stored at 68-77F. Do not store above 104F. (EPA, 1998)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Absorb remaining liquid in sand or inert absorbent. Collect leaking liquid in covered containers. Then store and dispose of according to local regulations. Do NOT wash away into

sewer. Do NOT let this chemical enter the environment.

6.2 Environmental precautions

Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer. Personal protection: chemical protection suit including self-contained breathing apparatus.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Keep in a well-ventilated room./Storage temperature should be less than 40 deg C on account of the tendency/ to isomerize.

Pure form: -20°C for 3 years | In solvent: -80°C for 1 year

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Color	Yellow
Odour	Phenolic odor
Melting point/freezing point	3.4°C
Boiling point or initial boiling point and boiling range	140-145°C (0.05 torr)
Flammability	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating

	or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	165.2°C
Auto-ignition temperature	no data available
Decomposition temperature	140-145°C
pH	no data available
Kinematic viscosity	no data available
Solubility	DMSO: Soluble, Ethanol: 160 mg/mL (577.14 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
N-octanol-water partition coefficient	log Kow= 3.30
Vapour pressure	0mmHg at 25°C
Density and/or relative density	1.3227
Relative vapour density	no data available
Particle characteristics	no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Decomposes on heating and on burning. This produces toxic fumes including nitrogen oxides, phosphorus oxides and sulfur oxides.

10.2 Chemical stability

It is hydrolyzed by alkali, in 10 m sodium hydroxide 50% loss occurs in 4.5 hr @ 30 deg c

10.3 Possibility of hazardous reactions

Organophosphates, such as FENITROTHION, are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides. Partial oxidation by oxidizing agents may result in the release of toxic phosphorus oxides.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral: LD50 Rat (female) acute oral 800 mg/kg

Inhalation: no data available

Dermal: LD50 Rat (male) acute percutaneous 890 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Cancer Classification: Group E Evidence of Non-carcinogenicity for Humans

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes and skin. The substance may cause effects on the nervous system. This may result in convulsions, respiratory failure and death. Cholinesterase inhibition. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Cholinesterase inhibition. Cumulative effects are possible. See Acute Hazards/Symptoms.

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish: LC50 Rainbow trout 2.4 mg/l/96 hr, water 10 deg C (95% confidence limit 2.0-2.9 mg/l), wt 1.5 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. Technical material, 95%.

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 loss of fenitrothion was faster in non-sterile soil than sterile soil indicating degradation in soil was a combination of abiotic and microbial reactions(1). The rate of fenitrothion degradation in soil depended on pH, soil type, organic amendment, soil moisture content and pesticide concentration(1). The half-life was 1608 days in a non-sterile sandy loam soil containing 1,000 ppm fenitrothion at a soil pH 7.2 and moisture content of 50%(1). On the other hand, the biodegradation half-life was 13 days in a non-sterile clay loam soil containing 100 ppm fenitrothion at a soil pH 10 and moisture content of 50%(1).

12.3 Bioaccumulative potential

There were no consistent differences in concn of fenitrothion in streamwater with depth, or between midstream and slow water at the stream edge. This was true of aq and oil-based formulations. A large portion of the fenitrothion was taken up by suspended material; in sediment, it was taken up mainly by the organic fraction. Concn of fenitrothion were above pre-spray values in most plants and insects sampled, and in some, above peak concn found in the water. Highest and most persistent residues were found in a livewort. Highest residues in an animal were found in black fly larvae, perhaps explained by their filter-feeding on suspended matter with high fenitrothion concn. Peak concn in plants and animals usually occurred at 6 or 24 hr postspray sampling times, and in all cases decr thereafter. Aminofenitrothion and fenitrooxon in sediments and 3-methyl-4-nitrophenol in plants and insects were seldom and inconsistently detected.

12.4 Mobility in soil

Measured fenitrothion Koc values of 593 and 254 in Tsukuba and Kanuma soils(1) and 1531, 1201, 833, and 1061 in 4 rice soils(2) have been determined. According to a classification scheme(3), these Koc value suggests that fenitrothion is expected to have low to moderate mobility in soil. A study conducted on organic and silty clay loam soil, from the Boreal Forest in Ontario, Canada, indicate a maximum adsorption rate of 92 ug/g and 81 ug/g, respectively, in 30 hrs when fenitrothion-acetone is added to the soils(4). In the same experiment, studies with a buffer solution showed 38 and 48% desorption rate after 50 hrs extraction time(4).

12.5 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. TRANSPORT INFORMATION

14.1 UN Number

no data available

14.2 UN Proper Shipping Name

no data available

14.3 Transport hazard class(es)

no data available

14.4 Packing group, if applicable

no data available

14.5 Environmental hazards

no data available

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

European Inventory of Existing Commercial Chemical Substances (EINECS)	Listed.
EC Inventory	Listed.
United States Toxic Substances Control Act (TSCA) Inventory	Not Listed.
China Catalog of Hazardous chemicals 2015	Not Listed.
New Zealand Inventory of Chemicals (NZIoC)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

16. OTHER INFORMATION

Information on revision

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Abbreviations and acronyms

- 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%

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

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/>

Other Information

Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product. All products are for Research Use Only - Not For Human or Veterinary or Therapeutic Use