



SIGMA-ALDRICH

Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name FENITROTHION, 250MG, NEAT
Product Number 442592
Brand Supelco Chemical
Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313	EC no	Annex I Index Number
FENITROTHION	122-14-5	No	204-524-2	015-054-00-0

Formula C9H12NO5PS
Synonyms AC-47300, Accothion, Agria 1050, Agriya 1050, Agrothion, American cyanamid CL-47,300, Arbogal, BAY 41831, Bayer 41831, Bayer S 5660, Cekutrothion, CL 47300, CP 47114, m-Cresol, 4-nitro-, O-ester with O,O-dimethyl phosphorothioate, O,O-Dimethyl-O-(3-methyl-4-nitrophenyl)-monothiofosfaat (Dutch), O,O-Dimethyl-O-(3-methyl-4-nitro-phenyl)-monothiophosphat (German), Dimethyl 3-methyl-4-nitrophenyl phosphorothionate, O,O-Dimethyl O-(3-methyl-4-nitrophenyl) phosphorothionate, O,O-Dimethyl O-(3-methyl-4-nitrophenyl) phosphorothioate, O,O-Dimethyl O-(3-methyl-4-nitrophenyl) thiophosphate, O,O-Dimethyl-O-(4-nitro-5-methylphenyl)-thionophosphat (German), O,O-Dimethyl O-(4-nitro-3-methylphenyl)thiophosphate, O,O-Dimethyl O-4-nitro-m-tolyl phosphorothioate, Dimethyl 4-nitro-m-tolyl phosphorothionate, O,O-Dimethyl-O-(3-methyl-4-nitrophenyl) fosforotioato (Portuguese), O,O-Dimethyl-O-(3-methyl-4-nitro-fenil)-monotiofosfato (Italian), EI 47300, ENT 25,715, Fenition, Fenitrothion, Fenitrothion (Hungarian), Folithion, Folithion EC 50, 8057HC, Insectigas F, Kotion, Macbar, MEP (pesticide), Metathion, Metathione, Metathion E 50, Metathionine, Metathionine E50, Metation, Metation E50, 3-Methyl-4-nitrophenyl dimethyl phosphorothioate, Methylnitrophos, Mglawik F, Monsanto CP 47114, Novathion, Nuvanol, Oleosumifene, Ovados, Owadofos, OMS 43, Pennwalt C-4852, Phenitrothion, Phosphorothioic acid, O,O-dimethyl O-(3-methyl-4-nitrophenyl) ester, S 5660, S 112A, Sumifene, Sumithion, Sumitomo S-1102A, Super Sumithion, Thiophosphate de O,O-dimethyle et de O-(3-methyl-4-nitrophenyle) (French), Tionofosforan, O,O-dimetylo-O-(3-metylo)-4-nitrofenyloxy (Polish), Verthion

Section 3 - Hazards Identification

Emergency Overview

Highly Toxic (USA) Very Toxic (EU). Dangerous for the environment.
Harmful in contact with skin and if swallowed. Very toxic by inhalation. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Cholinesterase inhibitor. Target organ(s): Central nervous system. Heart.

HMIS Rating
Health: 2* Flammability: 1 Reactivity: 0

NFPA Rating
Health: 2 Flammability: 1 Reactivity: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flash Point: > 210 °F > 100 °C

Autoignition Temp: N/A

Extinguishing Media

Suitable

Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area.

Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

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Storage
Suitable
Keep tightly closed.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Use only in a chemical fume hood.

Personal Protective Equipment

Respiratory

Government approved respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Exposure Limits

Country	Type	Value
Poland	NDS	0.02 MG/M3
Poland	NDSch	0.1 MG/M3
Poland	NDSP	-

Section 9 - Physical/Chemical Properties

Appearance	Color
Physical State	Yellow
Liquid	

Molecular Weight: 277.2 AMU

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	109 °C	0.1 mmHg
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	1.32 g/cm3	20 °C
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	> 210 °F	
Flash Point °C	> 100 °C	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	

Solubility

Solubility In Water: Insoluble.

Other Solvents: MOST ORGANIC SOLVENTS.

N/A = not available

Section 10 - Stability and Reactivity

Stability

Stable

Stable.

Materials to Avoid

Strong oxidizing agents.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide, Phosphorous oxides, Sulfur oxides.

Hazardous Polymerization

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

May cause skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

May cause eye irritation.

Inhalation

Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion

Harmful if swallowed.

Target Organ(s) or System(s)

Central nervous system. Heart. Blood. Eyes.

Signs and Symptoms of Exposure

Cholinesterase inhibitors can cause heavy salivation and secretion in the lungs, lachrymation, blurred vision, involuntary defecation, diarrhea, tremor, ataxia, sweating, hypothermia, lowered heart rate, and/or a fall in blood pressure as a result of their action at cholinergic nerve sites. Exposure can cause: Headache. Nausea. Vomiting. Dizziness. Drowsiness. Confusion. Weakness. Muscle cramps/spasms. Change in pupil size. Fever. Seizures. Incoordination. Convulsions. Coma.

RTECS Number: TG0350000

Toxicity Data

Oral - Man: 429 UL/KG (LDLO)

Remarks: Behavioral:Coma.

Lungs, Thorax, or Respiration:Respiratory depression.

Gastrointestinal:Other changes.

Oral - Rat: 250 mg/kg (LD50)

Inhalation - Rat: 378 mg/m3 (LC50)

Remarks: Behavioral:Tremor,

Behavioral:Muscle contraction or spasticity.

Lungs, Thorax, or Respiration:Dyspnea.

Skin - Rat: 1002 mg/kg (LD50)

Intraperitoneal - Rat: 300 MG/KG (LD50)

Remarks: Autonomic Nervous System:Other (direct) parasympathomimetic.

Lungs, Thorax, or Respiration:Fibrosis (interstitial).

Subcutaneous - Rat: 1300 MG/KG (LD50)

Intravenous - Rat: 33 MG/KG (LD50)

Remarks: Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels: Reactivates cholinesterase.

Lungs, Thorax, or Respiration:Dyspnea.

Behavioral:Convulsions or effect on seizure threshold.

Intratracheal - Rat: 950 MG/KG (LD50)

Remarks: Autonomic Nervous System:Other (direct) parasympathomimetic.

Behavioral:Tremor.

Lungs, Thorax, or Respiration:Fibrosis (interstitial).

Oral - Mouse: 229 mg/kg (LD50)

Skin - Mouse: 2500 mg/kg (LD50)

Remarks: Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:True cholinesterase.

Intraperitoneal - Mouse: 280 MG/KG (LD50)

Remarks: Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:True cholinesterase.

Subcutaneous - Mouse: 1 GM/KG (LD50)

Remarks: Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:True cholinesterase.

Intracerebral - Mouse: 1 GM/KG (LD50)

Oral - Cat: 142 mg/kg (LD50)

Skin - Rabbit: 1250 mg/kg (LD50)

Oral - Guinea pig: 500 mg/kg (LD50)

Intravenous - Guinea pig: 112 MG/KG (LD50)

Remarks: Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels: Reactivates cholinesterase.

Lungs, Thorax, or Respiration:Dyspnea.

Behavioral:Convulsions or effect on seizure threshold.

Oral - Chicken: 280 mg/kg (LD50)

Remarks: Peripheral Nerve and Sensation:Flaccid paralysis without anesthesia (usually neuromuscular blockage).

Behavioral:Somnolence (general depressed activity).

Behavioral:Convulsions or effect on seizure threshold.

Oral - Quail: 56.2 mg/kg (LD50)

Oral - Duck: 1190 mg/kg (LD50)

Skin - Duck: 504 mg/kg (LD50)

Oral - Bird (wild): 11 mg/kg (LD50)

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation test</u>
Human	40 MG/L	leukocyte	Cytogenetic analysis
Human	40 MG/L	lymphocyte	Cytogenetic analysis
Human	55400 UG/L	Embryo	Sister chromatid exchange
Hamster	200 MG/L	lung	Cytogenetic analysis
Hamster	277 MG/L	lung	Sister chromatid exchange

Chronic Exposure - Reproductive Hazard

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	90 MG/KG	Oral	(7-15D PREG)

Result: Effects on Newborn: Behavioral. Effects on Newborn: Other postnatal measures or effects.

Section 12 - Ecological Information

N/A

Acute Ecotoxicity Tests

Test Type
EC50 Algae

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Time: Value:
96.0 h 1.1 - 2.2 mg/l

Test Type

EC50 Daphnia

Species

Daphnia magna

Time: Value:
48.0 h 0.01 mg/l

Test Type

LC50 Fish

Species

Carassius auratus (Goldfish)

Time: Value:
48.0 h 3.4 mg/l

Test Type

LC50 Fish

Species

Cyprinus carpio

Time: Value:
96.0 h 15 mg/l

Test Type

LC50 Fish

Species

Onchorhynchus mykiss (Rainbow trout)

Time: Value:
96.0 h 1.0 - 2.0 mg/l

Test Type

LC50 Fish

Species

Lepomis macrochirus (Bluegill)

Time: Value:
96.0 h 2.5 - 4.3 mg/l

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Toxic, liquids, organic, n.o.s.

UN#: 2810

Class: 6.1

Packing Group: Packing Group III

Hazard Label: Keep away from food

PIH: Not PIH

IATA

Proper Shipping Name: Toxic liquid, organic, n.o.s.

IATA UN Number: 2810

Hazard Class: 6.1

Packing Group: III

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Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: Xn N

Indication of Danger

Harmful. Dangerous for the environment.

Risk Statements R: 22 50/53

Harmful if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements S: 60 61

This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Classification and Label Text

Indication of Danger

Highly Toxic (USA) Very Toxic (EU). Dangerous for the environment.

Risk Statements

Harmful in contact with skin and if swallowed. Very toxic by inhalation. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements

After contact with skin, wash immediately with plenty of soap-suds. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Statements

Cholinesterase inhibitor. Target organ(s): Central nervous system. Heart.

United States Regulatory Information

SARA Listed: No

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.