FENTHION

0655
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CAS No: 55-38-9
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UN No: 3018
EC No: 015-048-00-8

O,O-Dimethyl-O-(4-methylthio-m-tolyl) phosphorothioate
Phosphorothioic acid, O,O-dimethyl O-(3-methyl-4-(methylthio)phenyl) ester
$C_{10}H_{15}O_3PS_2$ / $(H_3CO)_2PSOC_6H_3(CH_3)SCH_3$
Molecular mass: 278.3

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE		**PREVENT GENERATION OF MISTS! STRICT HYGIENE!**	**IN ALL CASES CONSULT A DOCTOR!**
Inhalation	Dizziness. Nausea. Vomiting. Sweating. Pupillary constriction, muscle cramp, excessive salivation. Laboured breathing. Convulsions. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer immediately for medical attention.
Skin	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention. Wear protective gloves when administering first aid.
Eyes	Blurred vision.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Abdominal cramps. Diarrhoea. Nausea. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer immediately for medical attention.

SPILLAGE DISPOSAL

Personal protection: A/P2 filter respirator for organic vapour and harmful dust. Chemical protection suit. and protective gloves. Collect leaking liquid in sealable containers. Absorb remaining liquid in dry sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment.

PACKAGING & LABELLING

EU classification
T Symbol
N Symbol
R: 21/22-23-48/25-50/53-68
S: (1/2-)36/37-45-60-61
UN classification
UN Hazard Class: 6.1
UN Pack Group: III
GHS classification
Signal: Danger
Skull-Health haz-Enviro
Toxic if swallowed
Toxic in contact with skin
Causes damage to the nervous system
Very toxic to aquatic life

Do not transport with food and feedstuffs. Severe marine pollutant.

EMERGENCY RESPONSE

Transport Emergency Card: TEC (R)-61GT6-III

SAFE STORAGE

Separated from strong oxidants, food and feedstuffs. Well closed. Keep in a well-ventilated room. Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.

IPCS
International Programme on Chemical Safety

Prepared in the context of cooperation between the International Programme on Chemical Safety and the European Commission

SEE IMPORTANT INFORMATION ON THE BACK.

IMPORTANT DATA

Physical State; Appearance
COLOURLESS OILY LIQUID, WITH CHARACTERISTIC ODOUR.

Chemical dangers
The substance decomposes on heating producing toxic fumes including phosphorus oxides and sulfur oxides. Reacts with oxidants.

Occupational exposure limits
TLV: 0.05 mg/m^3 as TWA; (skin); A4 (not classifiable as a human carcinogen); BEI issued; (ACGIH 2006).
MAK: 0.2 (Inhalable fraction) mg/m^3; Peak limitation category: II(2); skin absorption (H); (DFG 2006).

Routes of exposure
The substance can be absorbed into the body in hazardous amounts by inhalation, through the skin and by ingestion.

Inhalation risk
A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20/C; on spraying or dispersing, however, much faster.

Effects of short-term exposure
Cholinesterase inhibitor. The substance may cause effects on the nervous system, resulting in convulsions and respiratory failure. The effects may be delayed. Medical observation is indicated.

Effects of long-term or repeated exposure
Cholinesterase inhibitor; cumulative effect is possible: see acute hazards/symptoms.

PHYSICAL PROPERTIES

Decomposes when heated
Melting point: 7.5/C
Relative density (water = 1): 1.25
Solubility in water, g/100 ml: 0.005
Vapour pressure, Pa at 25/C: negligible
Relative vapour density (air = 1): 9.6
Flash point: 170/C
Auto-ignition temperature: 365/C
Octanol/water partition coefficient as log Pow: 3.17-4.8

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.

NOTES

The technical grade (95-98% pure) is a yellow to brown oil with a weak garlic-like odour.
Carrier solvents used in commercial formulations may change physical and toxicological properties.
Do NOT take working clothes home.
Depending on the degree of exposure, periodic medical examination is suggested.
Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

ADDITIONAL INFORMATION