

CAS No: 3689-24-5
 RTECS No: XN4375000
 UN No: 1704
 EC No: 015-027-00-3

Thiodiphosphoric acid tetraethyl ester
 Ethyl thiopyrophosphate
 Tetraethyl dithiopyrophosphate (TEDP)
 $C_8H_{20}O_5P_2S_2 / (C_2H_5O)_2P(S)OP(S)(OC_2H_5)_2$
 Molecular mass: 322.30

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION	Container may explode violently in heat of fire.		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Blue skin. Dizziness. Drowsiness. Headache. Pupillary constriction, muscle cramp, excessive salivation. Sweating. Laboured breathing. Nausea. Convulsions. Unconsciousness. Weakness. See Ingestion.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
Skin	MAY BE ABSORBED! Redness. Sweating and twitching in the area of absorption. (Further see Inhalation).	Protective gloves. Protective clothing.	Rinse and then wash skin with water and soap. Refer for medical attention.
Eyes	Redness. Pain. Pupillary constriction.	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. Confusion. Diarrhoea. Vomiting. Loss of appetite. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL

Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in dry sand or inert absorbent and remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment.

PACKAGING & LABELLING

T+ Symbol
 N Symbol
 R: 27/28-50/53
 S: (1/2-)23-28-36/37-45-60-61
 UN Hazard Class: 6.1
 UN Pack Group: II

Do not transport with food and feedstuffs. Marine pollutant.

EMERGENCY RESPONSE

Transport Emergency Card: TEC (R)-61GT2-II

SAFE STORAGE

Dry. Well closed. Separated from strong oxidants, food and feedstuffs. Keep in a well-ventilated room. Do not store in metal containers.

IMPORTANT DATA

Physical State; Appearance

PALE YELLOW LIQUID, WITH CHARACTERISTIC ODOUR.

Chemical dangers

The substance decomposes on heating producing highly toxic fumes of phosphorous oxides and sulfur oxides. Reacts with strong oxidants. Attacks iron, some forms of plastic, rubber and coatings.

Occupational exposure limits

TLV: 0.2 mg/m³ as TWA; (skin); A4 (not classifiable as a human carcinogen); BEI issued; (ACGIH 2004).
MAK: 0.0075 ppm, 0.1 mg/m³; Peak limitation category: II(2); skin absorption (H); Pregnancy risk group: C; (DFG 2004). 0.1 mg/m³ skin EC OELs

Routes of exposure

The substance can be absorbed into the body 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.

Effects of short-term exposure

The substance is irritating to the eyes and the skin. The substance may cause effects on the nervous system, resulting in convulsions, respiratory failure. Cholinesterase inhibitor. Exposure far above the OEL may result in death. 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

Boiling point at 0.2666 kPa: 136-139/C

Relative density (water = 1): 1.2

Solubility in water: none

Vapour pressure, Pa at 20/C: 0.0226

Octanol/water partition coefficient as log Pow: 3.99

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

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.

Technical grade is a dark-coloured liquid, boiling point 131-132/C at 0.267 kPa.

Do NOT take working clothes home.

ASP 47, Bay-E-393, Bladafum, Dithion, Dithiotep, Dithiofos are trade names.

Card has been partly updated in October 2004 and 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information