Dimethyl chlorothiophosphate

【Product Name】

O,O-Dimethyl phosphorochloridothioate

【Synonyms】

Dimethyl chlorothiophosphate
Dimethyl thiophosphoryl chloride
O,O-dimethyl phosphorochloridothioate

【CAS】

2524-03-0

【Formula】

C2H6ClO2PS

【Molecular Weight】

160.56

【EINECS】

219-754-9

【RTECS】

TD1830000

【RTECS Class】

Mutagen

【Beilstein/Gmelin】

471300

【Beilstein Reference】

4-01-00-01263

Physical and Chemical Properties

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【Appearance】

Colorless to light amber liquid with a stench.

【Solubility in water】

Decomposes

【Boiling Point】

66

【Vapor Pressure】

4

【Density】

1.3414 g/cm3 (0 C)

【Usage】

Intermediate for insecticides, pesticides, fungicides, oil & gasoline additives, plasticizers, corrosion inhibitors, flame retardants, flotation agents.

【Vapor Density】

5.54

【Refractive Index】

1.4776

First Aid Measures

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【Ingestion】

Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

【Inhalation】

Get medical aid immediately. Remove from exposure to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth respiration if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical

device.

【Skin】

Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

【Eyes】

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation is required (at least 30 minutes).

Handling and Storage

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【Storage】

Keep away from heat, sparks, and flame. Keep away from sources of ignition. Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Store protected from moisture.

【Handling】

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Do not ingest or inhale. Use and store under nitrogen. Do not allow contact with water. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Keep from contact with moist air and steam.

Hazards Identification

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【Inhalation】

May be fatal if inhaled. Causes chemical burns to the respiratory tract. May cause effects similar to those described for ingestion. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. May cause systemic effects. May cause burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Inhalation at high concentrations may cause CNS depression and asphixiation.

【Skin】

Harmful if absorbed through the skin. Causes skin burns. If absorbed, may cause central nervous system effects. May cause cyanosis of the extremities. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

【Eyes】

Causes eye burns. May cause conjunctivitis and corneal inflammation. Causes lachyrmation (tearing), blurred vision, and may cause temporar y lesions.

【Ingestion】

Causes gastrointestinal tract burns. May cause liver damage. May cause perforation of the digestive tract. May be harmful if swallowed. Ingestion of large amounts may cause CNS depression. May cause excessive salivation, abdominal pain, incontinence, muscle cramps and weakness, and confusion.

【Hazards】

This material may ignite combustibles (wood, paper, oil, etc.). When heated it emits very toxic fumes of chlorine containing compounds, phosphorus oxides, and sulfur oxides.

【UN (DOT)】

2267

Exposure Controls/Personal Protection

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【Personal Protection】

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Skin: Wear appropriate protective gloves to prevent skin exposure. Clothing: Wear appropriate protective clothing to prevent skin exposure.

【Respirators】

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

【Exposure Effects】

Headache, dizziness, muscle spasms, and profound weakness are common. Alterations of level of consciousness, eeg changes, seizures and coma may occur. Seizures may be more common in children. Peripheral neuropathy of the mixed sensory-motor type may be delayed in onset by 6 to 21 days. Recovery may be slow or incomplete.
Most of the organophosphates have not been teratogenic in experimental animals, but some have caused lower fetal or birth weights and/or higher neonatal mortality.
Sporadic reports of human birth defects related to organophosphates have not been verified.

Fire Fighting Measures

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【Flash Point】

105

【Fire Fighting】

Wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Combustible Liquid. Containers may explode when heated. Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas. Extinguishing media: Do NOT use water directly on fire. Use water spray to cool fire-exposed containers. Use foam, dry chemical, or carbon dioxide. Do NOT get water inside containers.

【Fire Potential】

This material may burn but does not ignite readily.

Accidental Release Measures

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【Small spills/leaks】

Clean up spills immediately, using the appropriate protective equipment. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Do not get water inside containers. Cover with dry earth, dry sand, or other non-combustible material followed with plastic sheet to minimize spreading and contact with water.

Stability and Reactivity

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【Incompatibilities】

Moisture, water, strong bases, strong oxidizing agents.

【Stability】

Stable under normal temperatures and pressures. Begins autocatalytic decomposition at temperatures above 120 C.

【Decomposition】

Hydrogen chloride, phosphine, carbon monoxide, oxides of sulfur, oxides of phosphorus, carbon dioxide, chloride fumes.

【Combustion Products】

When heated to decomp, can emit highly toxic fumes of oxides of phosphorous.

Transport Information

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【UN Number】

2267

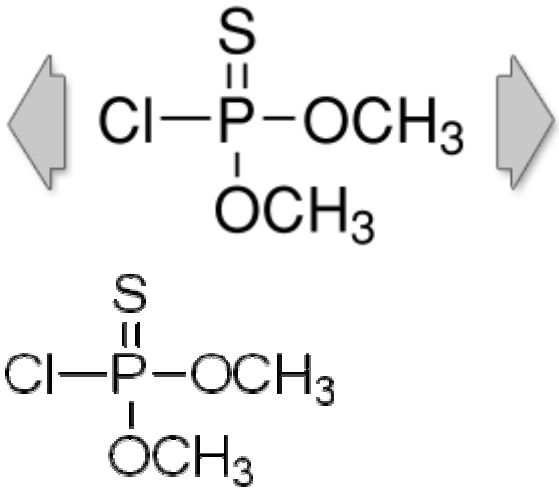
【Hazard Class】

6.1

【Packing Group】

II

D152951



Dimethyl chlorothiophosphate

97%

Price and Availability

Click For Pricing and Availability

Synonym:	Dimethyl phosphorochloridothionate
CAS Number:	2524-03-0
Linear Formula:	$(CH_3O)_2P(S)Cl$
Molecular Weight:	160.56
EC Number:	219-754-9
MDL number:	MFCD00008353
PubChem Substance ID:	24893472

Description

Packaging 5, 100, 500 g in glass btl

Properties

vapor pressure	0.67 psi (20 ℃)
assay	97%
refractive index	*n*20/D 1.482(lit.)
bp	66-67 ℃/16 mmHg(lit.)
density	1.322 g/mL at 25 ℃(lit.)

Safety

Hazard Codes	T
Risk Statements	23/24/25-34
Safety Statements	23-26-36/37/39-45
RIDADR	UN 2267 6.1/PG 2
WGK Germany	3
RTECS	TD1830000
Flash Point(F)	221 ℉
Flash Point(C)	105 ℃