

## SAFETY DATA SHEET

DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

Page: 1

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### Section 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

**Product name:** DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

**CAS number:** 2356-16-3

**Product code:** PC4179D

**Synonyms:** ETHYL (DIETHOXYPHOSPHORYL)(FLUORO)ACETATE  
ETHYL (DIETHYLPHOSPHONO)(FLUORO)ACETATE

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.3. Details of the supplier of the safety data sheet

**Company name:** Apollo Scientific Ltd

Units 3 & 4

Parkway

Denton

Manchester

M34 3SG

UK

**Tel:** 0161 337 9971

**Fax:** 0161 336 6932

**Email:** david.tideswell@apolloscientific.co.uk

#### 1.4. Emergency telephone number

### Section 2: Hazards identification

#### 2.1. Classification of the substance or mixture

**Classification under CLP:** Acute Tox. 3: H301+311+331; STOT RE 2: H373; Eye Irrit. 2: H319; Skin Irrit. 2: H315

**Most important adverse effects:** Toxic if swallowed, in contact with skin or if inhaled. Causes skin irritation. Causes serious eye irritation. May cause damage to organs through prolonged or repeated exposure.

#### 2.2. Label elements

**Label elements:**

**Hazard statements:** H301+311+331: Toxic if swallowed, in contact with skin or if inhaled.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H373: May cause damage to organs through prolonged or repeated exposure.

**Signal words:** Danger

# SAFETY DATA SHEET

DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

Page: 2

**Hazard pictograms:** GHS06: Skull and crossbones

GHS08: Health hazard



**Precautionary statements:** P260: Do not breathe dust/fumes/gas/mist/vapours/spray.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P301+310: IF SWALLOWED: Immediately call a.

## 2.3. Other hazards

**Other hazards:** Combustible (H227)

**PBT:** This product is not identified as a PBT/vPvB substance.

## Section 3: Composition/information on ingredients

### 3.1. Substances

**Chemical identity:** DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

**CAS number:** 2356-16-3

## Section 4: First aid measures

### 4.1. Description of first aid measures

**Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin.

Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Transfer to hospital if there are burns or symptoms of poisoning.

**Eye contact:** Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

**Ingestion:** Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. Transfer to hospital as soon as possible.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. If conscious, ensure the casualty sits or lies down. If unconscious and breathing is OK, place in the recovery position. If unconscious, check for breathing and apply artificial respiration if necessary. If breathing becomes bubbly, have the casualty sit and provide oxygen if available. Transfer to hospital as soon as possible.

### 4.2. Most important symptoms and effects, both acute and delayed

**Skin contact:** There may be redness or whiteness of the skin in the area of exposure. Irritation or pain may occur at the site of contact. Absorption through the skin may be fatal.

**Eye contact:** There may be severe pain. The eyes may water profusely.

**Ingestion:** There may be soreness and redness of the mouth and throat. There may be vomiting. Convulsions may occur. There may be loss of consciousness.

[cont...]

## SAFETY DATA SHEET

DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

Page: 3

**Inhalation:** There may be shortness of breath with a burning sensation in the throat. Absorption through the lungs can occur causing symptoms similar to those of ingestion.  
Convulsions may occur. There may be loss of consciousness.

### 4.3. Indication of any immediate medical attention and special treatment needed

## Section 5: Fire-fighting measures

### 5.1. Extinguishing media

**Extinguishing media:** Carbon dioxide, dry chemical powder, foam. Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

### 5.2. Special hazards arising from the substance or mixture

**Exposure hazards:** Toxic. In combustion emits toxic fumes of carbon dioxide / carbon monoxide. Hydrogen fluoride (HF). Phosphorus oxides.

### 5.3. Advice for fire-fighters

**Advice for fire-fighters:** Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions:** Notify the police and fire brigade immediately. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid.

### 6.2. Environmental precautions

**Environmental precautions:** Do not discharge into drains or rivers. Contain the spillage using bunding.

### 6.3. Methods and material for containment and cleaning up

**Clean-up procedures:** Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

### 6.4. Reference to other sections

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

**Handling requirements:** Avoid direct contact with the substance. Ensure there is exhaust ventilation of the area.  
Avoid the formation or spread of mists in the air. Only use in fume hood.

[cont...]

## SAFETY DATA SHEET

DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

Page: 4

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage conditions:** Store in a cool, well ventilated area. Keep container tightly closed.

**Suitable packaging:** Must only be kept in original packaging.

### 7.3. Specific end use(s)

**Specific end use(s):** No data available.

## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

**Workplace exposure limits:** No data available.

### DNEL/PNEC Values

**DNEL / PNEC** No data available.

### 8.2. Exposure controls

**Engineering measures:** Ensure there is exhaust ventilation of the area.

**Respiratory protection:** Self-contained breathing apparatus must be available in case of emergency.

**Hand protection:** Impermeable gloves.

**Eye protection:** Safety glasses with side-shields. Ensure eye bath is to hand.

**Skin protection:** Impermeable protective clothing.

## Section 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

**State:** Liquid

**Colour:** Colourless

**Evaporation rate:** No data available.

**Oxidising:** No data available.

**Solubility in water:** No data available.

**Viscosity:** No data available.

**Boiling point/range°C:** 75@0.01mmHg

**Flammability limits %: lower:** No data available.

**Flash point°C:** 73

**Autoflammability°C:** No data available.

**Relative density:** 1.194

**VOC g/l:** No data available.

**Melting point/range°C:** No data available.

**upper:** No data available.

**Part.coeff. n-octanol/water:** No data available.

**Vapour pressure:** No data available.

**pH:** No data available.

### 9.2. Other information

**Other information:** No data available.

## Section 10: Stability and reactivity

[cont...]

## SAFETY DATA SHEET

DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

Page: 5

### 10.1. Reactivity

**Reactivity:** Stable under recommended transport or storage conditions.

### 10.2. Chemical stability

**Chemical stability:** Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

**Hazardous reactions:** Hazardous reactions will not occur under normal transport or storage conditions.

### 10.4. Conditions to avoid

**Conditions to avoid:** Heat. Hot surfaces. Flames.

### 10.5. Incompatible materials

**Materials to avoid:** Strong oxidising agents. Strong acids.

### 10.6. Hazardous decomposition products

**Haz. decomp. products:** In combustion emits toxic fumes.

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

#### Relevant hazards for product:

Hazard	Route	Basis
Acute toxicity (ac. tox. 3)	INH DRM ING	Hazardous: calculated
Skin corrosion/irritation	DRM	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated
STOT-repeated exposure	-	Hazardous: calculated

### Symptoms / routes of exposure

**Skin contact:** There may be redness or whiteness of the skin in the area of exposure. Irritation or pain may occur at the site of contact. Absorption through the skin may be fatal.

**Eye contact:** There may be severe pain. The eyes may water profusely.

**Ingestion:** There may be soreness and redness of the mouth and throat. There may be vomiting. Convulsions may occur. There may be loss of consciousness.

**Inhalation:** There may be shortness of breath with a burning sensation in the throat. Absorption through the lungs can occur causing symptoms similar to those of ingestion. Convulsions may occur. There may be loss of consciousness.

## Section 12: Ecological information

### 12.1. Toxicity

**Ecotoxicity values:** No data available.

[cont...]

## SAFETY DATA SHEET

DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

Page: 6

### 12.2. Persistence and degradability

**Persistence and degradability:** No data available.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential:** No data available.

### 12.4. Mobility in soil

**Mobility:** No data available.

### 12.5. Results of PBT and vPvB assessment

**PBT identification:** This product is not identified as a PBT/vPvB substance.

### 12.6. Other adverse effects

**Other adverse effects:** No data available.

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

**Disposal operations:** Transfer to a suitable container and arrange for collection by specialised disposal company. MATERIAL SHOULD BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS

**Disposal of packaging:** Dispose of as special waste in compliance with local and national regulations Observe all federal, state and local environmental regulations.

**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

## Section 14: Transport information

### 14.1. UN number

**UN number:** UN2810

### 14.2. UN proper shipping name

**Shipping name:** TOXIC LIQUID, ORGANIC, N.O.S.

### 14.3. Transport hazard class(es)

**Transport class:** 6.1

### 14.4. Packing group

**Packing group:** III

### 14.5. Environmental hazards

**Environmentally hazardous:** No

**Marine pollutant:** No

### 14.6. Special precautions for user

**Tunnel code:** E

**Transport category:** 2

[cont...]

# SAFETY DATA SHEET

DIETHYL [(ETHOXYCARBONYL)(FLUORO)METHYL]PHOSPHONATE

Page: 7

## Section 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

**Specific regulations:** Not applicable.

### 15.2. Chemical Safety Assessment

**Chemical safety assessment:** A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

## Section 16: Other information

### Other information

**Other information:** This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

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\* Data predicted using computational software. The OECD QSAR-Toolbox for grouping chemicals into categories. Developed by LMC bulgaria.

<http://echa.europa.eu/support/oeqd-qsar-toolbox>

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**Phrases used in s.2 and s.3:** H301+311+331: Toxic if swallowed, in contact with skin or if inhaled.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H373: May cause damage to organs <or state all organs affected, if known> through prolonged or repeated exposure <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

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