



>>Entry Name: ***O,O*-Diethyl phosphorothioate**, 9Cl, 8Cl

Synonym(s): *O,O*-Diethyl thiophosphate. *O,O*-Diethyl hydrogen thiophosphate. *O,O*-Diethyl thiophosphoric acid. DETP

CAS Registry Number: 2465-65-8

$(\text{EtO})_2\text{P}(\text{S})\text{OH} \rightleftharpoons (\text{EtO})_2\text{P}(\text{O})\text{SH}$

Molecular Formula: $\text{C}_4\text{H}_{11}\text{O}_3\text{PS}$

Molecular Weight: 170.169

Accurate Mass: 170.016652

Percentage Composition: C 28.23%; H 6.52%; O 28.21%; P 18.20%; S 18.84%

General Statement: The thiol form predominates in aq. solns. and the thiono in alcohols

Use/Importance: Corrosion inhibitor

Physical Description: Liq.

Boiling Point: $\text{Bp}_{2.5}$ 106-107°. $\text{Bp}_{0.05}$ 76-78°

Density: d_4^{20} 1.181

pKa Value: $\text{p}K_a$ 2.84 (EtOH)

Refractive Index: n_D^{20} 1.4719

>>Derivative: Na salt

CAS Registry Number: 5852-63-1

Physical Description: Cryst. ($\text{CHCl}_3/\text{Et}_2\text{O}$)

Melting Point: Mp 203° (196-198°)

>>Derivative: K salt

CAS Registry Number: 5871-17-0

Physical Description: Cryst. (Me_2CO or EtOH)

Melting Point: Mp 197-201°

Aldrich: 44517-7

>>Derivative: NH_4 salt

CAS Registry Number: 5871-16-9

Physical Description: Cryst.

Melting Point: Mp 144-145.5°

>>Derivative: Dicyclohexylammonium salt

CAS Registry Number: 13941-62-3

Physical Description: Solid

Melting Point: Mp 155-156°

>>Derivative: Fluoride

see *O,O*-Diethyl phosphorofluoridothioate, [DLL51-W](#)

>>Derivative: Chloride

see *O,O*-Diethyl phosphorochloridothioate, [GGT81-R](#)

>>Derivative: Amide

see *O,O*-Diethyl phosphoramidothioate, [DRC93-H](#)

>>Derivative: Anilide

see Phenylphosphoramidothioic acid, [DRD22-Q](#)

>>Derivative: Azide

see *O,O*-Diethyl phosphorazidothioate, [DRF54-L](#)

>>Derivative: Hydrazide

see *O,O*-Diethyl phosphorohydrazidothioate, [DRF75-S](#)

>>Derivative: 2-Phenylhydrazide