



>>Entry Name: Demeton-*O*-methyl

Synonym(s): *O*-[2-(Ethylthio)ethyl] *O,O*-dimethyl phosphorothioate, 9CI

CAS Registry Number: 867-27-6

Related CAS Registry Numbers(s): 8022-00-2

$(\text{MeO})_2\text{P}(\text{S})\text{OCH}_2\text{CH}_2\text{SEt}$

Molecular Formula: $\text{C}_6\text{H}_{15}\text{O}_3\text{PS}_2$

Molecular Weight: 230.289

Accurate Mass: 230.020022

Percentage Composition: C 31.29%; H 6.57%; O 20.84%; P 13.45%; S 27.85%

Biological Use/Importance: Mixt. with Demeton-S-methyl [DHZ25-H](#) is used as an insecticide (*Methyl Demeton*, *Methyl-mercaptophos*)

Physical Description: Oil

Boiling Point: $\text{Bp}_{0.15}$ 74°

Density: d_4^{25} 1.18

Refractive Index: n_D^{20} 1.4980

>>Derivative: *S*-Oxide

CAS Registry Number: 25476-46-4

Molecular Formula: $\text{C}_6\text{H}_{15}\text{O}_4\text{PS}_2$

Molecular Weight: 246.288

Accurate Mass: 246.014937

Percentage Composition: C 29.26%; H 6.14%; O 25.98%; P 12.58%; S 26.04%

Boiling Point: $\text{Bp}_{0.01}$ 95-96°

>>Derivative: *S,S*-Dioxide

CAS Registry Number: 25476-48-6

Molecular Formula: $\text{C}_6\text{H}_{15}\text{O}_5\text{PS}_2$

Molecular Weight: 262.287

Accurate Mass: 262.009852

Percentage Composition: C 27.48%; H 5.76%; O 30.50%; P 11.81%; S 24.45%

Melting Point: Mp 60°

Boiling Point: $\text{Bp}_{0.12}$ 144°

References:

U.S. Pat., 1951, 2 571 989; *CA*, **46**, 3066a, (*synth*)

Henglein, A. *et al.*, *Z. Naturforsch., B*, 1955, **10**, 12-19, (*synth*)

Ger. Pat., 1956, 94 368; *CA*, **51**, 4413, (*synth, S-oxide*)

Hoffmann, F.W. *et al.*, *J.A.C.S.*, 1958, **80**, 1150-1154, (*synth*)

Terreni, M. *et al.*, *Tetrahedron*, 1995, **51**, 7981-7992, (*synth, pmr, P-31 nmr, ms, S-oxide, S,S-dioxide*)

Pesticide Manual, 11th edn., 1997, No. 205

Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 9th edn., Van Nostrand Reinhold, 1996, DA800