



>>Entry Name: Dimethoate, BSI

Synonym(s): *O,O*-Dimethyl *S*-(2-methylamino-2-oxoethyl) phosphorodithioate, 9CI. *O,O*-Dimethyl *S*-methylcarbamoylmethyl phosphorodithioate. *O,O*-Dimethyl phosphorodithioate *S*-ester with 2-mercapto-*N*-methylacetamide, 8CI. Cygon. Rogor. Roxion. Fostion MM. Daphene. Phosphamide. Perfekthion. Fosfotox

CAS Registry Number: 60-51-5

Type of Compound Code(s): AC4140

(MeO)₂P(S)SCH₂CONHMe

Molecular Formula: C₅H₁₂NO₃PS₂

Molecular Weight: 229.26

Accurate Mass: 228.999621

Percentage Composition: C 26.20%; H 5.28%; N 6.11%; O 20.94%; P 13.51%; S 27.97%

Use/Importance: Broad range contact and systemic acaricide and insecticide. Cholinesterase inhibitor

Physical Description: Cryst. (Et₂O or toluene/hexane)

Melting Point: Mp 51-52°

Solubility: Sol. H₂O, alcohols, CHCl₃, C₆H₆, ketones

Other Data: Stable between pH 2 and 7

Hazard & Toxicity: Symptoms of occup. exposure incl. weakness, nausea, headache, severe depression. LD₅₀ (rat, orl) 60 mg/kg. LD₅₀ (rat, skn) 353 mg/kg. Exp. reprod. and teratogenic effects

Supelco: R47-1920

References:

- Berkelhammer, G. *et al.*, *J.O.C.*, 1961, **26**, 2281, (*synth*)
Keith, L.H. *et al.*, *J. Assoc. Off. Anal. Chem.*, 1968, **51**, 1063, (*pmr*)
Gore, R.C. *et al.*, *J. Assoc. Off. Anal. Chem.*, 1971, **54**, 1040, (*ir, uv*)
Szalontai, G., *J. Chromatogr.*, 1976, **124**, 9, (*hplc*)
Stan, H.-J. *et al.*, *Fresenius' Z. Anal. Chem.*, 1977, **287**, 271, (*glc, ms*)
Paasivirta, J. *et al.*, *Org. Magn. Reson.*, 1977, **9**, 708, (*pmr, cmr, P-31 nmr*)
Daldrup, T. *et al.*, *Fresenius' Z. Anal. Chem.*, 1981, **308**, 413, (*tlc, glc, hplc*)
Stan, H.-J. *et al.*, *Biomed. Mass Spectrom.*, 1982, **9**, 483, (*glc, ms*)
Agrochemicals Handbook, Royal Society of Chemistry, 1983, A153
Ripley, B.D. *et al.*, *J. Assoc. Off. Anal. Chem.*, 1983, **66**, 1084, (*glc*)
Charalambous, J. *et al.*, *Phosphorus Sulfur Relat. Elem.*, 1984, **19**, 267, (*ms*)
Dangerous Prop. Ind. Mater. Rep., 1990, **10**, 7, (*rev, tox*)
Pesticide Manual, 9th edn., 1991, No. 4880
Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, DSP400
Handbook of Pesticide Toxicology, (Eds. Hayes, W.J. *et al*), Academic Press, 1991, 1015