



Molecular Formula: C₅₁H₉₇O₄P
Molecular Weight: 805.299
Accurate Mass: 804.712447
Percentage Composition: C 76.07%; H 12.14%; O 7.95%; P 3.85%
Use/Importance: Antioxidant for polymers
Physical Description: Cryst. (hexane)
Melting Point: Mp 55-57°

>>**Derivative:** Di-Ph ester
Synonym(s): Diphenyl (3,5-di-*tert*-butyl-4-hydroxybenzyl)phosphonate

CAS Registry Number: 6731-96-0

Molecular Formula: C₂₇H₃₃O₄P
Molecular Weight: 452.529
Accurate Mass: 452.211647
Percentage Composition: C 71.66%; H 7.35%; O 14.14%; P 6.84%
Physical Description: Cryst. (hexane)
Melting Point: Mp 135-136°

>>**Derivative:** Bis(trimethylsilyl) ester
Synonym(s): Bis(trimethylsilyl)[(3,5-di-*tert*-butyl-4-hydroxyphenyl)methyl]phosphonate

CAS Registry Number: 67344-32-5

Molecular Formula: C₂₁H₄₁O₄PSi₂
Molecular Weight: 444.697
Accurate Mass: 444.228101
Percentage Composition: C 56.72%; H 9.29%; O 14.39%; P 6.97%; Si 12.63%
Physical Description: Solid
Melting Point: Mp 134-136°

>>**Derivative:** Monoethyl ester, calcium(2+) salt
Synonym(s): Irganox 1425

CAS Registry Number: 65140-91-2
Molecular Formula: C₃₄H₅₆CaO₈P₂
Molecular Weight: 694.837
Accurate Mass: 694.307635
Percentage Composition: C 58.77%; H 8.12%; Ca 5.77%; O 18.42%; P 8.92%
Use/Importance: Antioxidant for polymers

>>**Derivative:** Monoethyl ester, nickel(2+) salt
Synonym(s): Irgastab 2002

CAS Registry Number: 30947-30-9
Molecular Formula: C₃₄H₅₆NiO₈P₂
Molecular Weight: 713.449
Accurate Mass: 712.28039
Percentage Composition: C 57.24%; H 7.91%; Ni 8.23%; O 17.94%; P 8.68%
Use/Importance: Light stabiliser for polymers

References:

Fr. Pat., 1963, 1 320 375; *CA*, **60**, 560b, (*octadecyl ester, synth, use*)
Tavs, P., *Chem. Ber.*, 1970, **103**, 2428, (*ester*)
Gross, H. *et al.*, *J. Prakt. Chem.*, 1978, **320**, 344, (*synth, derivs, pmr*)
Herdan, J.M. *et al.*, *Rev. Roum. Chim.*, 1989, **34**, 1515, (*esters, synth, pmr*)
Mukmeneva, N.A. *et al.*, *Zh. Obshch. Khim.*, 1992, **62**, 468; 1670; *J. Gen. Chem. USSR (Engl. Transl.)*, 1992, **62**, 380; 1372, (*esters, synth, ir, P-31 nmr*)