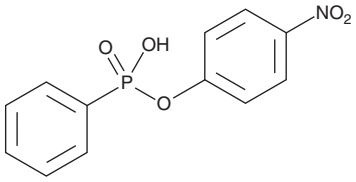
PRODUCT INFORMATION

4-Nitrophenyl Phenylphosphonate

Item No. 17436

CAS Registry No.: 57072-35-2
Formal Name: P-phenyl-phosphonic acid, mono(4-nitrophenyl) ester
Synonyms: *bis*(4-Nitrophenyl) Phenylphosphonate, *p*-Nitrophenyl Phenylphosphonate, NPPP
MF: $C_{12}H_{10}NO_5P$
FW: 279.2
Purity: ≥98%
UV/Vis.: λ_{max}: 215, 272 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly
Special Conditions: Solution turns yellow with PBS addition



Laboratory Procedures

4-Nitrophenyl phenylphosphonate is supplied as a crystalline solid. A stock solution may be made by dissolving the 4-nitrophenyl phenylphosphonate in the solvent of choice. 4-Nitrophenyl phenylphosphonate is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of 4-nitrophenyl phenylphosphonate in these solvents is approximately 14 and 30 mg/ml, respectively.

4-Nitrophenyl phenylphosphonate is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 4-nitrophenyl phenylphosphonate should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 4-Nitrophenyl phenylphosphonate has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

4-Nitrophenyl phenylphosphonate is a substrate for 5'-nucleotide phosphodiesterases.[1] It is a more preferable substrate to 5'-nucleotide phosphodiesterases than naturally occurring nucleotides or *bis*(4-nitrophenyl) phosphate because of its stability, ease of synthesis, and higher rate of hydrolysis under saturating conditions.[2]

References

1. Moe, O.A., Jr. and Butler, L.G. The catalytic mechanism of bovine intestinal 5'-nucleotide phosphodiesterase. pH and inhibition studies. *J. Biol. Chem.* **258(11)**, 6941-6946 (1983).
2. Kelly, S.J., Dardinger, D.E., and Butler, L.G. Hydrolysis of phosphonate esters catalyzed by 5'-nucleotide phosphodiesterase. *Biochem.* **14(22)**, 4983-4988 (1975).

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