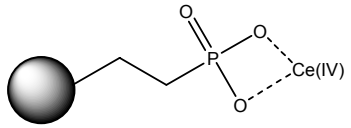
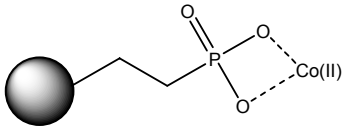
PhosphonicS Metal Oxidation Catalyst Kit

metals • inorganics • organometallics • catalysts • ligands • custom synthesis • cGMP facilities • nanomaterials

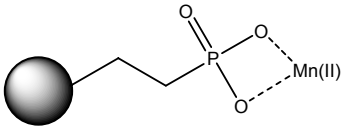
58-5100



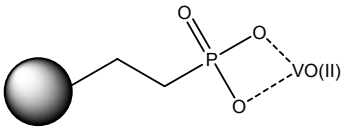
27-0900



25-1200



23-4380



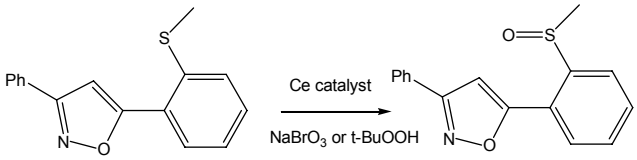
Reactions such as allylic and benzylic oxidations, alcohol oxidations and epoxidations are key chemical transformations in organic synthesis. In general these reactions are conducted by the use of stoichiometric, or even higher concentrations, of inorganic oxidants. Typical oxidizing agents include potassium permanganate, manganese dioxide, chromium trioxide, potassium chromate, potassium dichromate and peracids. These hazardous reagents produce large volumes of toxic wastes that are becoming increasingly costly to treat and dispose. In addition, difficulties are often encountered in the work up of reactions and purification of the products. There is a need for new heterogeneous oxidation catalysts that are not only effective, but exhibit ease of recovery and recycleability. PhosphonicS has developed a number of novel heterogeneous oxidation catalysts for a wide range of applications in the pharmaceutical, fine chemicals and petrochemical industries. Reactions include allylic and benzylic oxidations, epoxidations and the selective oxidations of alcohols to ketones and sulfides to sulfoxides.

Sold in collaboration with PhosphonicS Ltd. for research purposes only. Sold in 5g and 25g units.

96-6770 **PhosphonicS Metal Oxidation Catalyst Kit** - Contains a 5g unit of each of the following

58-5100 Cerium (IV) ethyl/butyl phosphonate Silica PhosphonicS (Si-POCe) yellow solid; S.A. >350 m^2/g
Particle size range: 70-200 microns Average pore size: 60Å Effective loadings: 0.3 to 0.5 mmol/g

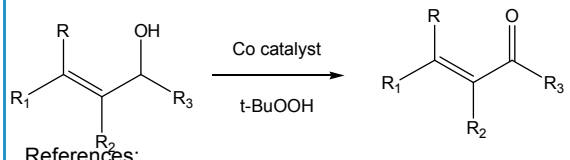
Technical Note:
1. Catalyst used for the oxidation of a range of sulfides to sulfoxides.



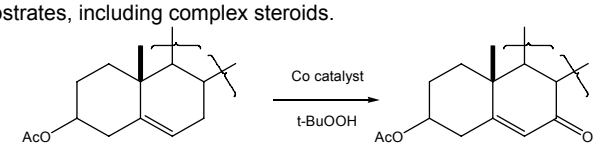
Reference:
1. *Tetrahedron Lett.*, **2005**, *46*, 4365.

27-0900 Cobalt (II) ethyl/butyl phosphonate Silica Phosphonics (Si-POCo) blue solid; S.A. >350 m^2/g
Particle size range: 70-200 microns Average pore size: 60Å Effective loadings: 0.3 to 0.5 mmol/g

Technical Note:
1. Catalyst used for oxidation of a wide variety allylic alcohols and alkene substrates, including complex steroids.



Tech. Note (1)
Ref. (1)



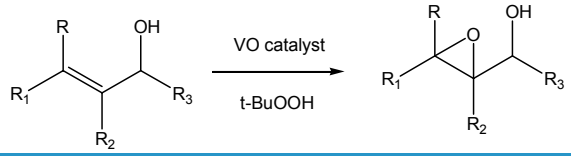
Tech. Note (1)
Ref. (2)

References:
1. *Tetrahedron Lett.*, **2004**, *45*, 4465.
2. *Tetrahedron Lett.*, **2003**, *44*, 4283.

25-1200 Manganese (II) ethyl/butyl phosphonate Silica PhosphonicS (Si-POMn) white solid; S.A. >350 m^2/g
Particle size range: 70-200 microns Average pore size: 60Å Effective loadings: 0.3 to 0.5 mmol/g

23-4380 Vanadyl (II) ethyl/butyl phosphonate Silica PhosphonicS (Si-POVO) blue-green solid; S.A. >350 m^2/g
Particle size range: 70-200 microns Average pore size: 60Å Effective loadings: 0.3 to 0.5 mmol/g

Technical Note:
1. Catalyst used for oxidation of a wide variety allylic alcohols.



Reference:
1. *Tetrahedron Lett.*, **2004**, *45*, 4465.

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