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Original Research Article

Mild and selective oxidation of sulfur compounds by *p*-xylylenebis (tri-phenyl-phosphonium tribromide) as green and reusable reagent

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ABSTRACT

p-Xylylene bis(triphenylphosphonium tribromide) (XBTPPTB) could be used for selective oxidation of sulfides and thiols to their corresponding sulfoxides and disulfides as an effective and green reagent, under nonaqueous and aprotic conditions without catalyst. This reagent can be recovered and reused several times. Also it is readily prepared and could be stored for months without losing its potency. To study the effect of solvent, oxidation of benzenethiol was performed in different solvents. Acetonitrile is the best solvent due to the relatively good solubility of the catalyst and starting materials. To study the effect of solvent, oxidation of methyl phenyl sulfide was performed in different solvents. Acetonitrile is the best solvent due to the relatively good solubility of the catalyst and starting materials. The effect of catalyst amount was investigated and the optimum ratio of reactant to oxidant (1:0.5) is found to be ideal for complete conversion of sulfides and thiols to the corresponded *products*

Keywords: Sulfide; Sulfoxide; Selective oxidation; *p*-Xylylenebis(triphenylphosphonium tribromide).