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Catalytic Methods for Synthesis of (Polyfluoroalkyl)-Arylchlorophosphates and Unsymmetrical Bis(Polyfluoroalkyl)Arylphosphates and Their Stereochemistry

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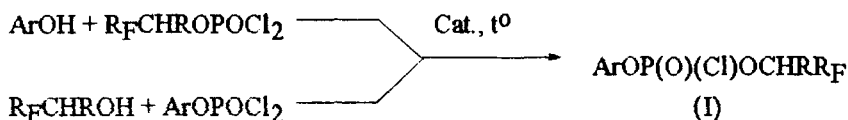
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CATALYTIC METHODS FOR SYNTHESIS OF (POLYFLUOROALKYL)- ARYLCHLOROPHOSPHATES AND UNSYMMETRICAL BIS(POLY- FLUOROALKYL)ARYLPHOSPHATES AND THEIR STEREOCHEMISTRY

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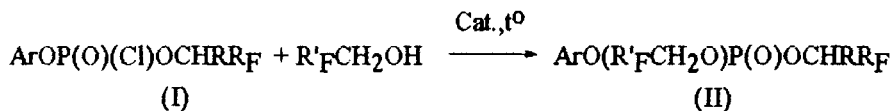
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Catalytic methods for the synthesis of (polyfluoroalkyl)arylchlorophosphates (I)
 have been developed



Ar = C₆H₅, 2,6-(CH₃)₂C₆H₃, 4-ClC₆H₄, napht-1-yl; R_F = CF₃, n-C₆F₁₃,
 cyclo-C₆F₁₁; R = H, CH₃

The chloridates (I) were found to react with 1,1-dihydropolyfluoroalkanois to give
 unsymmetrical bis(polyfluoroalkyl)arylphosphates (II) under catalytic phosphorylation
 conditions.



R'_F = CF₃, n-C₄F₉

It has been shown that in the case of chlorophosphates (I, R = CH₃) (which are
 the statistical mixtures of two diastereomers), the nucleophilic substitution of chlorine
 atoms by primary polyfluoroalkyl groups proceeds stereoselectively, and in the
 phosphates (II) the diastereomers ratio differs essentially from statistical one.

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