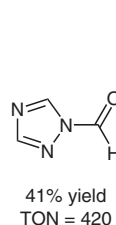
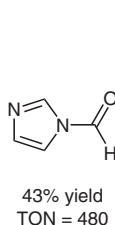
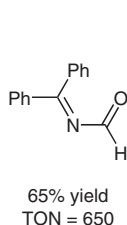
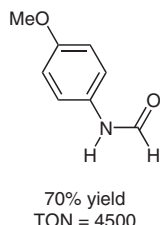
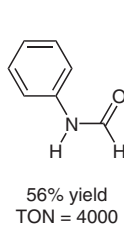
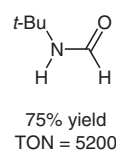
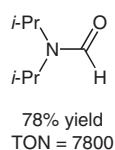
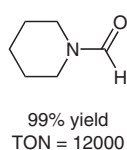
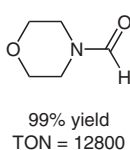
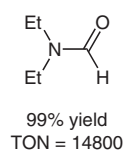
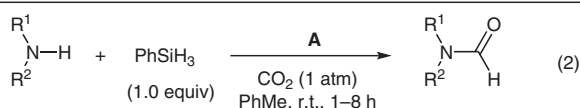
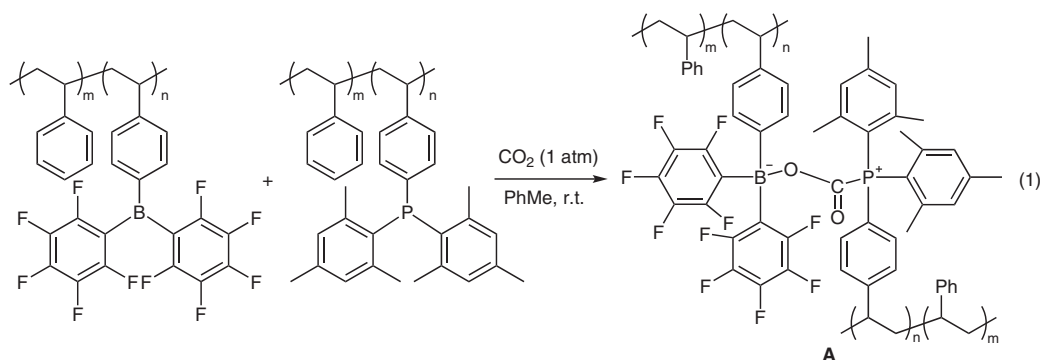


Formylation of Amines with CO₂ Using a Polymeric Frustrated Lewis Pair



Significance: A polymeric carbon dioxide bridged frustrated Lewis pair (**A**) was prepared by treatment of an electron-deficient triarylborane immobilized on polystyrene with a sterically demanding triarylphosphine immobilized on polystyrene in the presence of CO₂ (eq. 1). The polymeric frustrated Lewis pair **A** catalyzed the formylation of amines with carbon dioxide in the presence of phenylsilane at room temperature to give the corresponding formamides in up to 99% yield (eq. 2). The turnover number for the formylation reached as high as 14800.

Comment: The polymeric frustrated Lewis pair **A** was characterized by ¹¹B, ¹⁹F, and ³¹P NMR, DLS, TEM, FT-IR, UV-Vis, and conductivity measurements. In the formylation of diethylamine, morpholine, aniline, benzophenone imine, or imidazole, the catalyst was reused seven times with slight loss of the catalytic activity.

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