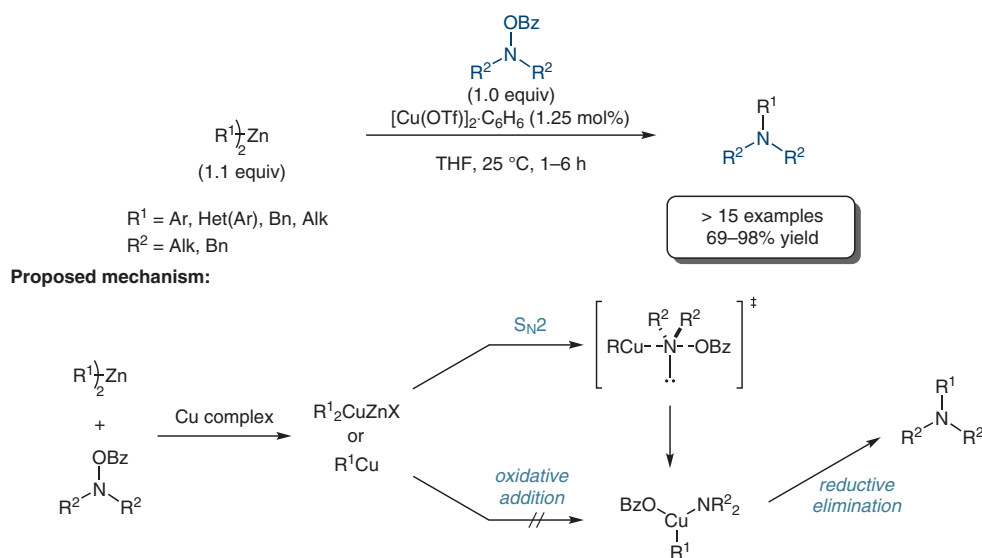


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Copper-Catalyzed Electrophilic Amination of Diorganozinc Reagents

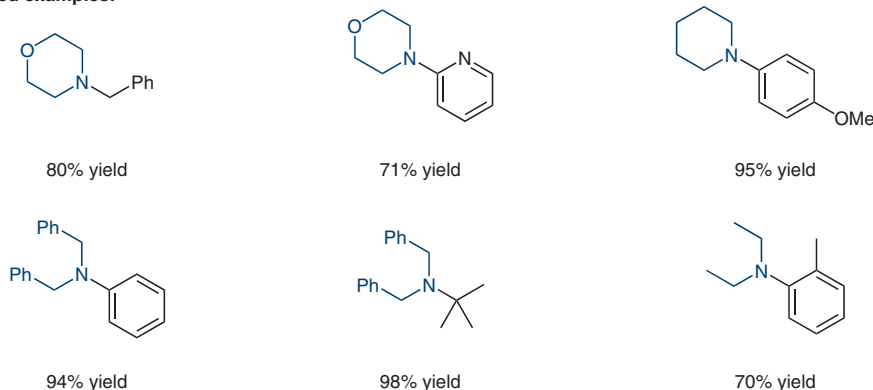
J. Am. Chem. Soc. **2004**, *126*, 5680–5681.

Electrophilic Amination of Diorganozinc Reagents Using *N*-Hydroxylamine Benzoates



> 15 examples
69–98% yield

Selected examples:



Significance: In 2004, Berman and Johnson developed the first electrophilic amination of *N*-hydroxylamine benzoates using diorganozinc reagents in the presence of $[\text{Cu}(\text{OTf})_2 \cdot \text{C}_6\text{H}_6]$. This umpolung-type reaction allowed access to a broad range of highly functionalized secondary and tertiary amines under mild conditions.

Comment: The outstanding performance of *N*-hydroxylamine benzoates as electrophilic nitrogen sources has inspired various following publications, opening up new opportunities for amination reactions. Based on experimental studies, the authors excluded an oxidative addition/reductive elimination pathway and proposed a $\text{S}_{\text{N}}2$ -type pathway. For further insights into electrophilic aminations based on this pioneering work, see: *Synthesis* **2011**, *24*, 3954–3964.

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