

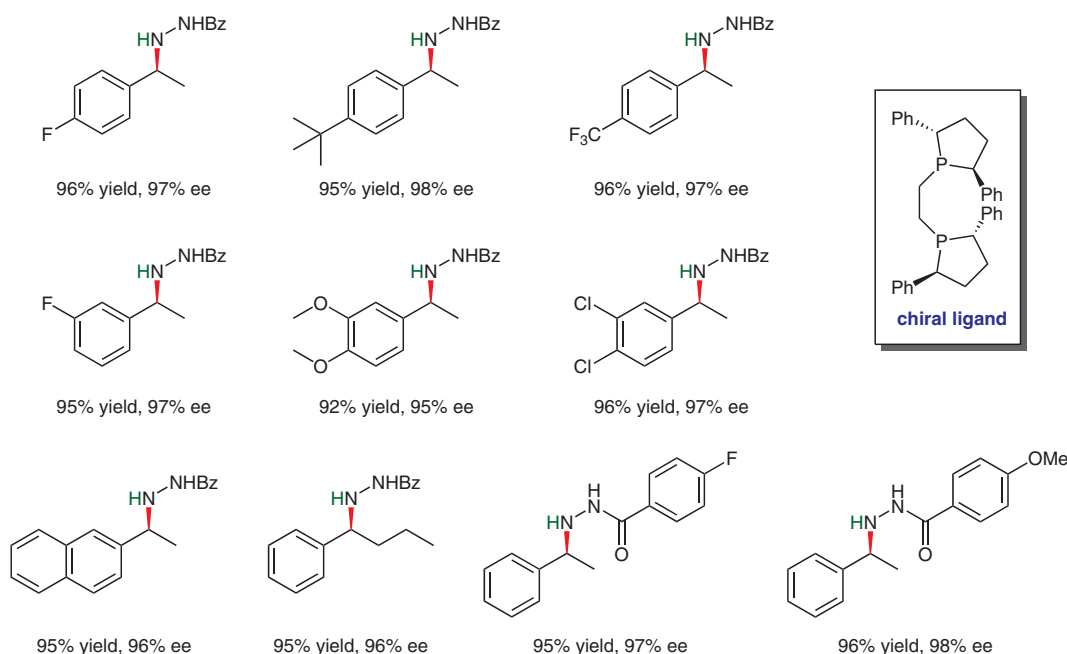
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Cobalt-Catalyzed Asymmetric Hydrogenation of C=N Bonds Enabled by Assisted Coordination and Nonbonding Interactions
Angew. Chem. Int. Ed. **2019**, *58*, 15767–15771.

Preparation of Chiral Hydrazines



Selected examples:



Significance: Zhang and co-workers developed a cobalt-catalyzed hydrogenation of substituted hydrazones, which leads to chiral hydrazines in excellent yield and enantioselectivity. Further functionalization of the hydrazines leads to synthetically useful amines, amides, and pyrazole derivatives.

Comment: To emphasize the synthetic value of this hydrogenation, the reaction was performed on a gram scale and a TON of 2000, which is the highest TON for this cobalt-catalyzed asymmetric hydrogenation to date, was achieved. Furthermore, the authors performed deuterium labeling experiments and confirmed that H_2 , and not *i*-PrOH, is the hydrogen source for the reaction.