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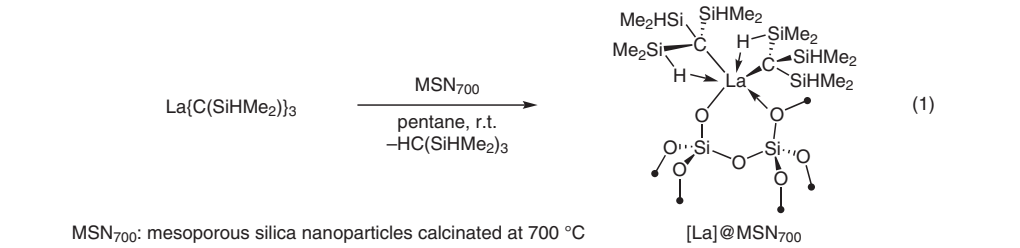
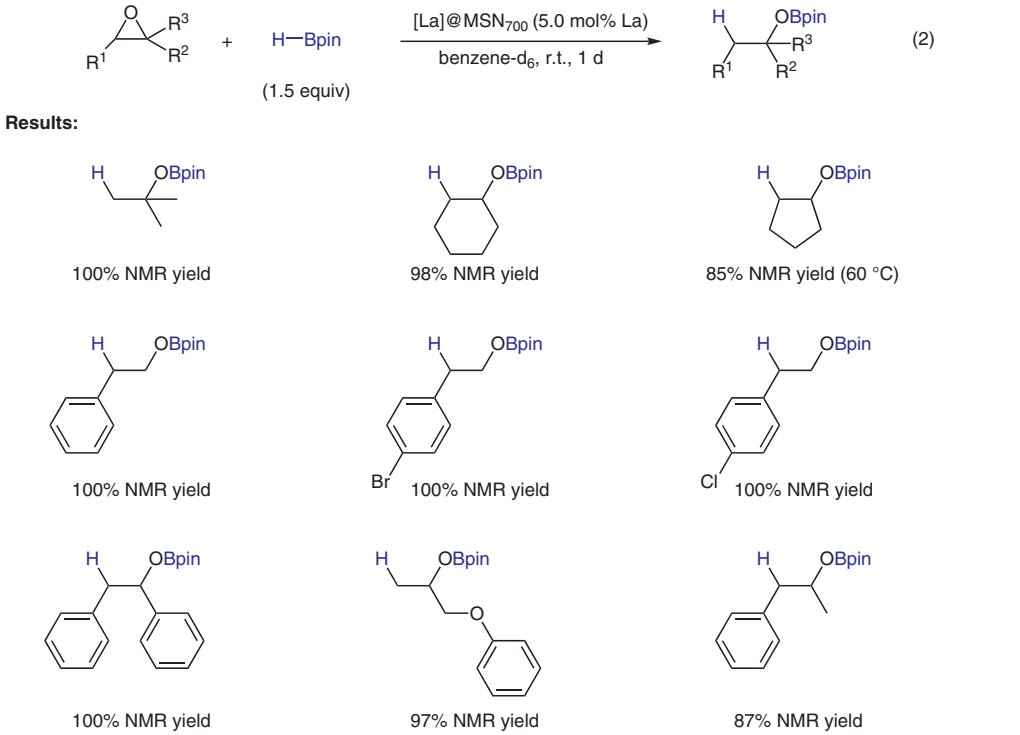
Silica-Supported Organolanthanum Catalysts for C–O Bond Cleavage in Epoxides
J. Am. Chem. Soc. **2020**, *142*, 2935–2947.

Ring-Opening Hydroboration of Epoxides Catalyzed by a Silica-Supported Organolanthanum Complex





Significance: An organolanthanum complex immobilized on mesoporous silica nanoparticles ([La]@MSN_{700}), prepared as shown in equation 1, catalyzed the ring-opening hydroboration of epoxides with pinacolborane to give the corresponding boryl ethers in 87–100% NMR yield (eq. 2).

Comment: [La]@MSN_{700} was characterized by means of mass balance of grafting, surface alcoholysis reactions, elemental analysis, and DRIFTS, STEM, EDX, and SSNMR spectroscopies. In the reaction of styrene oxide with pinacolborane, the catalyst was reused five times with a gradual loss of its catalytic activity.

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Category
Polymer-Supported Synthesis

Key words
lanthanum catalysis
mesoporous silica
hydroboration
epoxides

Synfact of the Month

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