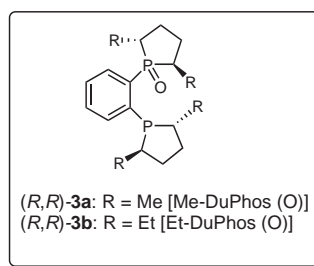
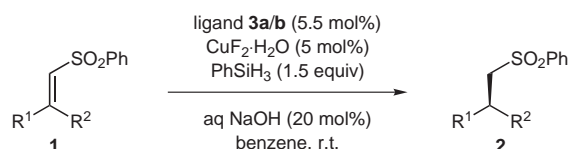
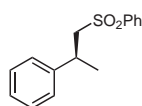
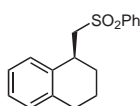
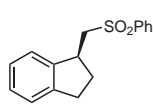
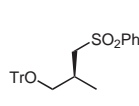


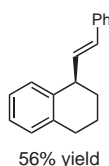
Reduction of Vinyl Phenyl Sulfones with Bisphosphine Monoxide Ligands



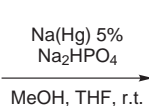
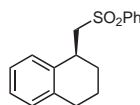
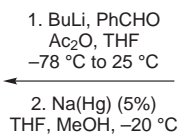
Selected products:

85% yield
99% ee97% yield
99% ee90% yield
99% ee94% yield
90% ee

Further transformations:



56% yield



95% yield

Significance: Quite recently, Carretero and co-workers have reported the asymmetric conjugate reduction of β,β -disubstituted vinyl 2-pyridyl sulfones (*Angew. Chem. Int. Ed.* **2007**, *46*, 3329). However, this methodology is unsuitable for the reduction of the corresponding phenyl sulfones. The authors found that a copper-phosphine catalyzed hydrosilylation of vinyl phenyl sulfones gave the corresponding products in excellent yields and ee values. Furthermore, this system shows good tolerance for aromatic as well as cyclic and acyclic alkyl-substituted substrates.

Comment: The present method expands on previous copper-catalyzed hydrosilylation reactions of nitroalkenes, imines, ketones, and nitriles. Interestingly, the use of hemilabile bidentate ligands was found to be essential for obtaining high conversions as compared to DuPhos and Josiphos, which gave low yields. To obtain reproducible yields, the addition of a basic additive was needed to eliminate the competitive silylation of water by PhSiH_3 . The present method provides efficient access to enantioenriched sulfones, which have been shown to be useful synthetic precursors. This is another nice demonstration of the utility of Charette's unsymmetrical ligand which holds promise for further applications.