**Significance:** Polymer-supported siloxanes were developed as transfer agents for cross-coupling reactions involving organolithium reagents. For example, the polystyrene-supported siloxane 1 was treated with an aryl or alkenyl lithium 2, and the resulting material was treated with an aryl halide 3 in the presence of PdCl$_2$, CuI, and ligand L to give the corresponding product 4 in 68–97% yield.

**Comment:** The transfer agent 1 was recovered almost quantitatively by simple filtration and rinsing, and reused in the cross-coupling several times. No cross-contamination of the products 4 was detected in a series of ten reactions with recycled 1 and various combinations of organolithium reagents 2 and aryl halides 3.