Chiral Lithium Binaphtholate Aqua Complex as a Highly Effective Asymmetric Catalyst for Cyanohydrin Synthesis

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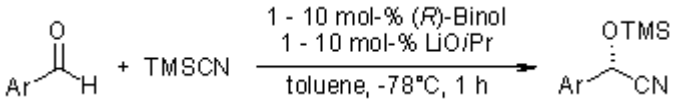
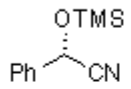
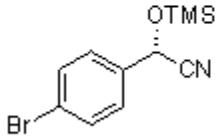
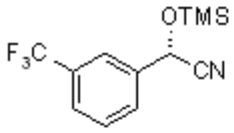
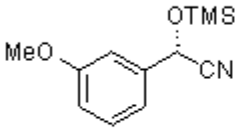
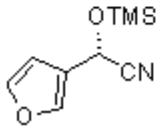


Abstract

A simple, inexpensive, and highly enantioselective cyanohydrin synthesis with aromatic aldehydes using chiral lithium binaphtholate aqua or alcohol complexes has been developed that is suitable for process chemistry. Dramatic improvements in enantiomeric excess have been realized along with an interesting changeover in absolute stereochemistry of cyanohydrin product against the thoroughly "dry" catalytic systems.

Product	10 mol-% catalyst Yield (%, isol.)	ee (%)	< 10 mol-% catalyst cat. (mol-%)	Yield (%, isol.)	ee (%)
	99	97	1	98	90
	98	93	3	95	90
	99	86			
	93	97	3	93	95
	96	98	3	93	93

see article for more examples

Key Words

Cyanohydrins

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