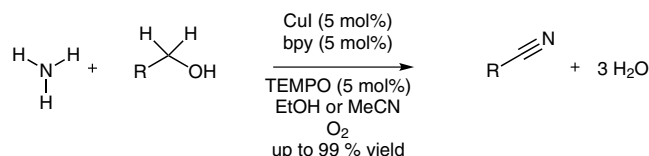


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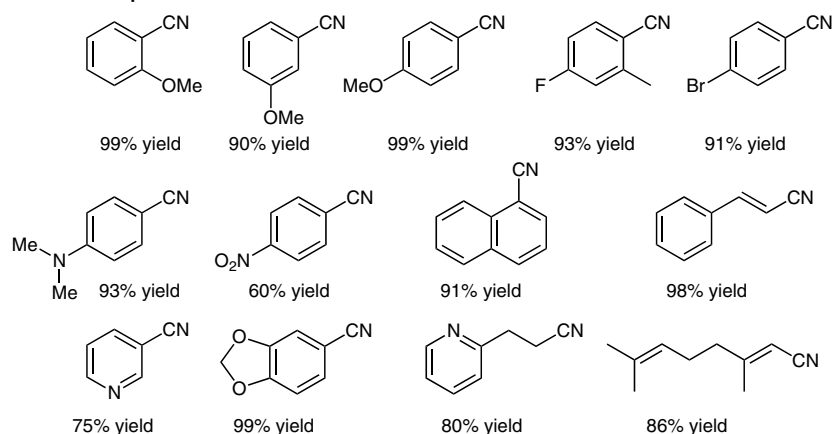
Highly Practical Synthesis of Nitriles and Heterocycles from Alcohols under Mild Conditions by Aerobic Double Dehydrogenative Catalysis

Org. Lett. **2013**, *15*, 1850–1853.

A Simple Methodology Yielding Nitriles from Alcohols



Selected scope:



Significance: Nitriles serve an important role in many chemical compounds ranging from pharmaceuticals to organic electronic materials. In the development of new n-type semiconducting organic materials easy access to nitrile-containing starting materials is vital. In this paper, the authors report a novel method for the synthesis of nitriles from alcohols using mild reaction conditions. The methodology utilizes cheap, commercially available reagents, CuI, bipyridine, TEMPO, oxygen and aliphatic or aromatic alcohols.

Comment: The authors describe a novel protocol for the conversion of aliphatic and aromatic alcohols into the corresponding nitriles utilizing mild reaction conditions. The double aerobic dehydrogenation proceeds under mild conditions for aromatic alcohols in ethanol at room temperature, while aliphatic alcohols require the use of acetonitrile at 50 °C. The protocol has a broad functional group tolerance and produces the desired nitriles in high to excellent yields.

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Synfacts 2013, 9(7), 0722 Published online: 17.06.2013

DOI: 10.1055/s-0033-1339227; Reg-No.: S05613SF

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