Epoxidation of 1,3-Butadiene using Iron Complex as an Efficient Catalyst

Tongqiang Zong, Yuvaraj Haldorai, 심재진*
영남대학교 디스플레이화학공학부
(jjshim@yu.ac.kr*)

Herein, we report an efficient epoxidation of 1,3-butadiene using iron complex as a catalyst and percaetic acid or hydrogen peroxide as an oxidant. Low loading of catalyst is sufficient for high conversion and product yield. The epoxidation reaction is readily scaled to gram quantity without significant loss of efficiency, and high butadiene concentration generally provided the highest yield. As the epoxidation reaction is both exothermic and fast, gram-scale reaction needs to be performed in a high surface to volume flask cooled by an ice bath. The product yield and conversion were analysed by gas chromatography (GC) using the internal standard integration. The structure of an isolated sample product was assinged through a combination of GC/MS and H-NMR. (Basic Research 2009-0074769 of Korea Research Foundation)