

Synthesis of BMO by Using Iron Complex as an Efficient Catalyst

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The epoxidation of butadiene to butadiene monoxide (BMO) is an attractive commercial process because BMO is an important intermediate for the production of many oxygenated heterocyclic compounds. Especially, BMO is readily used to prepare vinyl ethylene carbonate (VEC) which can largely improve the performance of the secondary battery as an additive. Herein, we report an efficient epoxidation of 1,3-butadiene using iron complex as the catalyst and per-acetic acid as the oxidant in homogeneous and heterogeneous solutions. Especially, for the heterogeneous method it is easy to get rid of catalyst. Low loading of catalyst is sufficient for high conversion and product yield. The product yield and conversion were analyzed by gas chromatography (GC) using the internal standard integration after fully removing the catalyst. The structure of an isolated product sample could be assigned through a combination of GC/MS and H-NMR.