

### Epoxidation of 1,3-Butadiene by Using Magnetic Heterogeneous 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. An efficient catalyst is prepared for epoxidation of 1,3-butadiene with using peracetic acid as the oxidant. Especially, it is easy to get rid of catalyst by magnetic separation and the catalyst can be recycled in theory. Low loading of catalyst is sufficient for high conversion and product yield. The correction of each intermediate of the catalyst is verified by FT-IR and FT-NMR. The product yield and conversion were analyzed by gas chromatography (GC) using the internal standard integration.