Abstract

The process to create diethyl ether from technical ethanol with zeolite based catalyst can produce higher diethyl ether purity because none of the catalyst matter incude in the product. This experiment aim is to know convertion data of ethanol and optimum temperature of reaction.

First to do in this experiment is making catalyst from natural zeolite with dealumination and calcination method. Ethanol with 85%, 90%, and 95% concentration is vaporized and adsorbed with molecular sieve and next reacted in the reactor with initial temperature 140°C, 160°C, 180°C, 200°C, 220°C and 240°C, with natural zeolite and alumina catalyst. Product from reactor than condensated and analized with gas cromatography. Next step is calculating conversion from GC result and compare it with each variable.

Calculation result show that ethanol conversion gradually increase alongside with ethanol initial concentration and reactor temperature. Moreover, ethanol conversion in the alumina catalyst higher than conversion in natural zeolite catalyst.

Keyword: natural zeolite, diethyl ether, ethanol, conversion