Abstract

Methyl ethyl ketone oxime (MEKO) was obtained by reaction of methyl ethyl ketone (MEK) with ammonia and hydrogen peroxide using titanium silicalite-1 (TS-1) as catalyst. The effect of reaction temperature, type of solvent, molar ratios of NH3/MEK, H2O2/MEK and mg catalyst/mmol MEK ratio was studied. Water was the most appropriate solvent to obtain high selectivity to oxime. 100% selectivity to MEKO and 60% conversion of MEK was obtained at 70 °C using the following parameters: H2O2/MEK = 0.7 and NH3/MEK = 1,12. mg.catalyst/mmol MEK = 10,5. Little decrease in the catalytic activity was observed after reusing the catalysts twice suggesting that incorporated Ti in the MFI structure is rather stable under the studied conditions.

Keywords

ammonolysis, methyl ethyl ketone oxime, TS-1, catalysts.