PROCESS AND CATALYST FOR CRACKING OF ETHERS AND ALCOHOLS

ABSTRACT

A process for the production of olefins from at least one of an alcohol and ether, the process including: contacting at least one alcohol or ether with a hydrofluoric acid-treated amorphous synthetic alumina-silica catalyst under decomposition conditions to produce an olefin. Also disclosed is a process for the production of isobutylene from methyl tertiary butyl ether, the process including: feeding methyl tertiary butyl ether (MTBE) to a reactor having at least one reaction zone containing a hydrofluoric acid-treated amorphous synthetic alumina-silica catalyst; contacting the MTBE with the hydrofluoric acid-treated amorphous synthetic alumina-silica catalyst under decomposition conditions to produce a reactor effluent comprising isobutylene, unreacted MTBE, heavies, and methanol; feeding the reactor effluent to a first distillation column; separating the isobutylene from the unreacted MTBE, heavies, and the methanol in the first distillation column to recover a first bottoms fraction comprising heavies, unreacted MTBE, and methanol and an isobutylene-rich overheads fraction.

Fig.1