

Abstract

Provided are (1) a method for converting ethanol, comprising contacting a raw material mixture containing ethylene and ethanol with a catalyst in an adiabatic reactor to obtain a reaction gas containing an olefin having 3 or more carbon atoms, (2) a method for converting ethanol, comprising contacting a raw material mixture containing methanol and ethanol with a catalyst in an adiabatic reactor to obtain a reaction gas containing an olefin having 3 or more carbon atoms, and (3) a method for converting ethanol, comprising: contacting a raw material mixture containing ethanol and ethylene with a catalyst in an adiabatic reactor to obtain a reaction gas containing an olefin having 3 or more carbon atoms; separating the reaction gas into fraction A mainly containing a hydrocarbon having 2 to 3 carbon atoms and fraction B mainly containing a hydrocarbon having 4 to 6 carbon atoms by a first distillation column; and recycling at least a portion of the fraction A as a portion of the raw material mixture to the reaction step.

[Figure 1]