

Abstract

A method for producing light olefin, comprising:

a cracking step of introducing a naphtha feedstock to a cracking furnace to obtain a naphtha cracking fraction;

an ethanol conversion step of introducing a starting material containing ethanol to a reactor where the starting material is brought into contact with a catalyst to obtain an ethanol conversion fraction containing ethylene and propylene;

a combination step of combining at least a portion of the naphtha cracking fraction or a fraction derived therefrom with at least a portion of the ethanol conversion fraction or a fraction derived therefrom to obtain a combination fraction; and

a cryogenic separation step of introducing the combination fraction or a fraction derived therefrom to a cryogenic separation equipment to separate ethylene and propylene, wherein

a relationship between a content C_E of ethylene and propylene in the ethanol conversion fraction or a fraction derived therefrom and a content C_C of ethylene and propylene in the naphtha cracking fraction or a fraction derived therefrom in the combination step satisfies the expression (A):

$$C_E > C_C \dots (A).$$

[Figure 1]