[CLAIMS]

What is claimed is:

[Claim 1]

A method for producing isobutylene, comprising:

producing isobutylene from isobutanol using a catalyst,

wherein the catalyst comprises:

at least one metal selected from the group consisting of Mn, Fe, Co, Ni, Cu, and Zn, in alumina which includes alumina consisting of one or more crystal phases of a monoclinic crystal phase, a tetragonal crystal phase, and a cubic crystal phase.

[Claim 2]

The method producing isobutylene according to Claim 1,

wherein a content of the metal is 0.025 mmol or more with respect to 1 g of the alumina.

[Claim 3]

A method for producing methacrylic acid, comprising:

producing methacrylic acid from the isobutylene produced according to the method for producing isobutylene according to Claim 1.

[Claim 4]

A method for producing methacrylic acid, comprising:

obtaining tert-butyl alcohol from the isobutylene produced according to the method for producing isobutylene according to Claim 1, and subsequently producing methacrylic acid from the obtained tert-butyl alcohol.

[Claim 5]

A method for producing methyl methacrylate, comprising:

producing methyl methacrylate from the methacrylic acid produced according to

the method for producing methacrylic acid according to Claim 3 or 4 and from methanol.