

Abstract

METAL OXIDE CATALYST, METHOD FOR PRODUCING SAME, AND APPARATUS FOR PRODUCING SAME

A metal oxide catalyst, which has a bulk composition represented by formula (1) below and which is used to produce a conjugated diolefin by an oxidative dehydrogenation reaction between a monoolefin, having 4 or more carbon atoms, and molecular oxygen, wherein standard deviation obtained by dividing a ratio of Bi molar concentration relative to Mo molar concentration at the surface of a catalyst particle by a ratio of the Bi molar concentration relative to the Mo molar concentration in a catalyst bulk is 0.3 or less.



(In the formula, A is at least one type of element selected from the group consisting of Ni and Co, B is at least one type of element selected from among alkali metal elements, C is at least one type of element selected from the group consisting of Mg, Ca, Sr, Ba, Zn and Mn, D is at least one type of rare earth element, E is at least one type of element selected from the group consisting of Cr, In and Ga, F is at least one type of element selected from the group consisting of Si, Al, Ti and Zr, O is oxygen, p, q, a, b, c, d, e, f and x denote the number of atoms of Bi, Fe, A, B, C, D, E, F and oxygen, respectively, relative to 12 Mo atoms, and are such that $0.1 \leq p \leq 5$, $0.5 \leq q \leq 8$, $0 \leq a \leq 10$, $0.02 \leq b \leq 2$, $0 \leq c \leq 5$, $0 \leq d \leq 5$, $0 \leq e \leq 5$ and $0 \leq f \leq 200$, and x is the number of oxygen atoms required to satisfy valency requirement of other elements present.)

FIG. 1