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- 8 OCT 2002

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LOWER ALKANE OXIDATIVE DEHYDROGENATION CATALYSTS AND A PROCESS FOR PRODUCING OLEFINS

Abstract of the Disclosure

The invention provides catalysts for oxidative dehydrogenation of lower alkanes, said catalysts being suitable for use in vapor phase oxidative dehydrogenation of C_2-C_5 lower alkanes in the presence of molecular oxygen to produce corresponding olefins and characterized by having a composition expressed by a general formula (1) below:



(in which A is at least one metal selected from the group consisting of molybdenum and chromium; Sb is antimony; W is tungsten; O is oxygen; and D is at least one metal selected from the group consisting of V, Nb, Ta, Fe, Co, Ni, Cu, Ag, Zn, B, Tl, Sn, Pb, Te, Li, Na, K, Rb, Cs, Mg, Ca, Sr, Ba, La, Ce and Sm; α , β , γ , δ and x denote atomic numbers of A, Sb, W, D and O, respectively, where when $\alpha = 1$, $\beta = 0.5-10$, $\gamma = 0.1-10$ and $\delta = 0-3$; and x is a numerical value determined by the state of oxidation of those elements other than oxygen).

When these catalysts are used in reactions for oxidizing and dehydrogenating C_2-C_5 alkanes with molecular oxygen at vapor phase, corresponding olefins can be produced at high yield.



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