COMPLEX OXIDE CATALYSTS AND PROCESS FOR PRODUCING (METH)ACROLEIN AND (METH)ACRYLIC ACID

[Technical field to which the invention belongs]

This invention relates to complex oxide catalysts and process for producing (meth)acrolein and (meth)acrylic acid. More particularly, the invention relates to Mo-Bi-containing complex oxide catalysts which are suitable for use in production of (meth)acrolein and (meth)acrylic acid, and process for producing (meth)acrolein and (meth)acrylic acid by vapor-phase oxidation of at least one compound selected from propylene, isobutylene, t-butanol and methyl-t-butyl ether, in presence of one of said catalysts.

[Conventional technology]

Many proposals have been made for improved catalysts for vapor phase catalytic oxidation of propylene, isobutylene and the like to produce (meth)acrylic acid and (meth)acrolein. For example, Official Gazette of Sho 50 (1975)-13308A1-JP and Sho 50-47915A1-JP proposed catalysts containing at least an element selected from K, Rb and Cs as one of the essential components, besides Mo, Bi, Fe, Sb and Ni, and Sho 64 (1989)-56634A1-JP proposed those containing at least an element selected from Ni and Co as the essential component, in addition to Mo, Bi and Fe. Also Sho 56 (1981)-52013B1-JP disclosed catalysts containing at least an element selected from Mg, Ca, Zn, Cd and Ba as the essential component, besides Mo, Bi and Fe; and Sho 56-23969B1-JP, catalysts containing at least an element selected from IIA and IIB Group elements as the essential component, besides Mo, Bi and Fe.

In those prior art catalysts, as Bi-supplying sourse water-soluble compounds thereof, in particular, nitric acid salts are used. However, use of bismuth nitrate as the Bi-supplying source in pro-