CLAIMS

1. A catalyst molded body for producing methacrolein and/or methacrylic acid from one or more compounds selected from isobutylene, tert-butyl alcohol, and methyl-tert-butyl ether satisfying the following Formulae (1) and (2), when a density (g/cm^3) of the catalyst molded body is X, a filling bulk density (g/cm^3) of the catalyst molded body is Y, and a representative length (cm) of the catalyst molded body is Z, wherein Z is 0.062 cm or more and 0.100 cm or less:

$$0.700\ (g/cm^3)^2 \leq (X \times Y) \leq 1.200\ (g/cm^3)^2 \qquad \text{Formula (1)}$$

$$0.050\ g/cm^2 \leq (X \times Z) \leq 0.130\ g/cm^2 \qquad \text{Formula (2)}$$

wherein Z is calculated by the following formula:

representative length Z (cm) of the catalyst molded body = volume (cm^3) of the catalyst molded body/outer surface area (cm^2) of the catalyst molded body.

2. The catalyst molded body according to claim 1, wherein X is 1.300 g/cm^3 or more and 1.800 g/cm^3 or less.

3. The catalyst molded body according to claim 1 or 2, wherein Y is 0.500 g/cm^3 or more and 0.800 g/cm^3 or less.

4. The catalyst molded body according to any one of claims 1 to 3, wherein the catalyst molded body comprises molybdenum, bismuth, and iron as essential components.

5. The catalyst molded body according to any one of claims 1 to 4, wherein the catalyst molded body has a composition represented by the following Formula (A):

$$Mo_aBi_bFe_cM_dX_eY_fZ_gSi_hO_i \qquad (A)$$

(In Formula (A), Mo, Bi, Fe, Si, and O represent molybdenum, bismuth, iron, silicon, and oxygen, respectively; M represents at least one element selected from the group consisting of cobalt and nickel; X represents at least one element selected from the group consisting of chromium, lead, manganese, calcium, magnesium, niobium, silver, barium, tin, tantalum, and zinc; Y represents at least one element selected from the group consisting of phosphorus, boron, sulfur, selenium, tellurium, cerium, tungsten, antimony, and titanium; Z represents at least one element selected from the group consisting of lithium, sodium, potassium, rubidium, cesium, and thallium; a, b, c, d, e, f, g, h, and i represent the atomic ratios of each element, and when a = 12, b = 0.01-3, c = 0.01-5, d = 1-12, e = 0-8, f = 0-5, g = 0.001-2, h = 0-20, and i is the oxygen atom ratio required to satisfy the valence of each above component).

6. A method for producing methacrolein and/or methacrylic acid, wherein one or

more compounds selected from the group consisting of isobutylene, tert-butyl alcohol and methyl-tert-butyl ether are subjected to a gas phase catalytic oxidation with molecular oxygen in the presence of the catalyst molded body according to any one of claims 1 to 5.