CLAIMS

1. A catalyst for producing an unsaturated carboxylic acid, wherein the catalyst is used for obtaining the unsaturated carboxylic acid from an unsaturated aldehyde, and comprises a Component A represented by a Formula (I) and a Component B that is a compound containing an inorganic acid,

MxM'x'Oy (I)

wherein in the Formula (I), M is at least one element selected from transition metal elements in the 4th period of the periodic table, M' is at least one element selected from metal elements other than the metal elements in the 4th period of the periodic table, O is oxygen, x, x' and y represent atomic ratios of the respective components, x is an integer of 1 or more, x' satisfies $0 \leq x' \leq 0.4$ for x = 1, and y is 0 or an atomic ratio of oxygen required for satisfying the atom ratios of the respective components, and wherein the inorganic acid contains at least one selected from the group consisting of a borate ion, a phosphate ion, a sulfate ion, a nitrate ion and a phosphotungstate ion.

2. The catalyst for producing the unsaturated carboxylic acid according to claim 1, wherein in the Formula (I), M is at least one selected from Cr, Mn, Co, Cu and Fe.

3. The catalyst for producing the unsaturated carboxylic acid according to claim 1 or 2, wherein in the Formula (I), x' satisfies $0 \leq x' < 0.1$.

4. The catalyst for producing the unsaturated carboxylic acid according to any one of claims 1 to 3, further comprising an insoluble or a slightly soluble Component C.

5. The catalyst for producing the unsaturated carboxylic acid according to claim 4, wherein the Component C is at least one selected from the group consisting of SiO_2, Al_2O_3, SiO_2-Al_2O_3, ZrO_2, zeolites and activated carbon.

6. The catalyst for producing the unsaturated carboxylic acid according to any one of claims 1 to 5, wherein a mass ratio (A/B) of the Component A to the Component B is 0.0001 to 1000.

7. The catalyst for producing the unsaturated carboxylic acid according to claim 6, wherein the mass ratio (A/B) is 0.1 to 300.

8. A catalyst for producing an unsaturated carboxylic acid, wherein the catalyst is used for obtaining the unsaturated carboxylic acid from an unsaturated aldehyde, and comprises: a Component A composed of at least one selected from Cr, Mn, Co and oxides thereof; and a Component B containing an inorganic acid, and wherein the inorganic acid contains at least one selected from the group consisting of H_3BO_3, H_3PO_4, H_2SO_4, HNO_3 and a phosphotungstic acid.

9. The catalyst for producing the unsaturated carboxylic acid according to any one of claim 1 to claim 8, wherein the unsaturated aldehyde is methacrolein and the unsaturated carboxylic acid is methacrylic acid.

10. A method for producing an unsaturated carboxylic acid, comprising: performing catalytic gas phase oxidation of an unsaturated aldehyde with molecular oxygen or a gas containing molecular oxygen in the presence of the catalyst for producing the unsaturated carboxylic acid according to any one of claims 1 to 9.

11. A method for producing an unsaturated carboxylic acid ester, comprising: producing the unsaturated carboxylic acid by performing catalytic gas phase oxidation of an unsaturated aldehyde with molecular oxygen or a gas containing molecular oxygen in the presence of the catalyst for producing the unsaturated carboxylic acid according to any one of claims 1 to 9; and esterifying the unsaturated carboxylic acid.