CLAIMS

1. A process for producing unsaturated hydrocarbons, comprising a step of dehydrogenating a hydrocarbon into a corresponding unsaturated hydrocarbon by contacting the hydrocarbon with a catalyst A that is obtained by supporting zinc and a Group VIIIA metal on a silicate obtained by removing at least part of the boron atoms from a borosilicate, wherein in the catalyst A, the residual rate of the boron atoms in the silicate is not more than 80% relative to all the boron atoms in the borosilicate.

2. The process for producing unsaturated hydrocarbons according to claim 1, wherein the hydrocarbon is a saturated hydrocarbon.

~~3. The process for producing unsaturated hydrocarbons according to claim 1 or 2, wherein in the catalyst A, the residual rate of the boron atoms in the silicate is not more than 80% relative to all the boron atoms in the borosilicate.~~

~~4~~3. The process for producing unsaturated hydrocarbons according to ~~any one of claims 1 to 3~~claim 1 or 2, wherein the amount of

the zinc in the catalyst A is 0.01 to 15% by mass.

~~54~~54. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~43~~43, wherein the amount of the Group VIIIA metal in the catalyst A is 0.01 to 5% by mass.

~~65~~65. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~54~~54, wherein the Group VIIIA metal is platinum.

~~76~~76. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~65~~65, wherein the borosilicate is a MFI zeolite.

~~87~~87. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~76~~76, wherein the hydrocarbon has 2 to 20 carbon atoms.

~~98~~98. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~87~~87, wherein the unsaturated hydrocarbon is an olefin and/or a diene.

~~109~~109. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~98~~98, wherein the hydrocarbon

is at least one selected from the group consisting of propane, n-butane, isobutane and isopentane.

~~11~~10. The process for producing unsaturated hydrocarbons according to claim 1, wherein the hydrocarbon is at least one selected from the group consisting of n-butene and ethylbenzene.

~~12~~11. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~11~~10, wherein the contacting of the hydrocarbon and the catalyst A is performed at a reaction temperature of 300 to 800°C.

~~13~~12. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~12~~11, wherein the contacting of the hydrocarbon and the catalyst A is performed at a reaction pressure of 0.01 to 1 MPa.

~~14~~13. The process for producing unsaturated hydrocarbons according to any one of claims 1 to ~~13~~12, wherein the contacting of the hydrocarbon and the catalyst A is performed in the presence of water.

~~15~~14. The process for producing unsaturated hydrocarbons

according to claim ~~14~~13, wherein the usage amount of water is 0.05 to 20 molar times relative to the hydrocarbon.

~~16~~15. A catalyst A which is obtained by supporting zinc and a Group VIIIA metal on a silicate obtained by removing at least part of the boron atoms from a borosilicate, and which catalyzes the dehydrogenation of a hydrocarbon into a corresponding unsaturated hydrocarbon.