

CATALYST FOR PREPARING ACROLEIN AND ACRYLIC ACID BY DEHYDRATION OF GLYCERIN, AND ITS PRODUCTION PROCESS

[Abstract]

An object of the present invention is to provide a catalyst for glycerin dehydration reaction for producing unsaturated aldehyde and unsaturated carboxylic acid at higher yield by a dehydration reaction of glycerin, and that can reduce a decrease in time of the conversion ratio of glycerin and the yields of unsaturated aldehyde and of unsaturated carboxylic acid. Another object of the present invention is to provide a catalyst for glycerin dehydration reaction that can produce acrolein and acrylic acid at higher yield by the dehydration reaction of glycerin, and the catalyst has a longer life. Still another object of the present invention is to provide a method for preparing the catalysts above.

A catalyst for glycerin dehydration comprising a carrier, wherein the carrier includes at least one metal oxide selected from the group consisting of TiO_2 , SiO_2 , Al_2O_3 , ZrO_2 , and Nb_2O_5 , wherein the carrier includes a bimodal porous structure in which the volume ratio between a pore volume of mesopores having a pore size of more than 2 nm to less than 50 nm to a pore volume of macropores having a pore size of 50 nm or more is equal to or more than 0.5, and wherein the carrier configures to support a W-containing metal oxide thereon or a metal oxide containing at least one element selected from the group consisting of P, Si, Mo, and V, in addition to the W-containing metal oxide thereon, and to cause a catalytic dehydrogenation reaction with glycerin to produce acrolein and acrylic acid.

[Designated Figure] None