

## ABSTRACT

A novel olefin production process is provided which can be established as an industrial and practical process capable of producing olefins by directly reacting a ketone and hydrogen in a single reaction step. In particular, a novel olefin production process is provided in which propylene is obtained with high selectivity by directly reacting acetone and hydrogen.

The olefin production process according to the present invention includes reacting a ketone and hydrogen in the presence of at least one dehydration catalyst and a silver-containing catalyst, and the at least one dehydration catalyst is selected from metal oxide catalysts containing a Group 6 element, zeolites, aluminas and heteropoly acid salts in which part or all the protons in heteropoly acids are exchanged with metal cations.