

Abstract

The present invention provides a catalyst for an addition reaction of alkylene oxide, the catalyst comprises a nanocomposite ion-exchange resin having a structural formula of $P-Im^+-M^-$, wherein P is a nanocomposite resin matrix, Im^+ is a cation derived from 5-6 membered heterocycle containing at least one nitrogen atom such as imidazolium cation, pyrazolium cation, pyrrolidinium cation, piperidinium cation, piperazinium cation, pyrimidinium cation, pyrazinium cation, pyridazinium cation, triazinium cation, and M^- is an anion. The catalyst of the present invention can be used in the addition reaction of alkylene oxide and carbon dioxide. The catalyst has high wear resistance, high swelling resistance, and high activity. The products after the reaction are easy to separate, and the catalyst can be used continuously many times.

Figure 1