

ABSTRACT

A process for producing ϵ -caprolactam is provided which comprises the steps of subjecting cyclohexanone oxime to a gaseous phase Beckmann rearrangement reaction in a fluidized bed system using a solid catalyst and re-generating the catalyst, wherein said process comprises a step of treating the catalyst with an oxygen-containing gas at an elevated temperature in a re-generation step so that the nitrogen content of the catalyst falls within a range of 10 ppm to 2,500 ppm on its way to the reaction step from the re-generating step.

According to the present invention, ϵ -caprolactam is produced with a high conversion or a high selectivity without interrupting the rearrangement reaction or the re-generation step.