Reductive amination of Polyoxyalkylene using Co based catalysts

김경준, 김경준*
호남석유화학
(kimable7@lottechem.com*)

Derivatives obtained from polyetheramines (PEAs) have many applications in various chemical industries including curing agent for epoxy resins, cross-linking agents for textile. In our experiment, a cobalt-based tri-metallic catalyst has been applied for the synthesis of PEA through reductive amination, which involves reaction of polyoxyalkylene (POA) with ammonia and hydrogen at high temperature (~220℃) and high pressure (~150 bar). The catalyst used in this reaction is considered to balance between dehydrogenation and hydrogenation. The experiment is carried out to improve activity and selectivity of PEA with varying the components of catalyst and the amount of ammonia. It is shown that these factors influence the activation procedure of catalyst and reaction of PEA. Especially, the change of POA to propylene oxide-based starting materials considerably favors the formation of PEA.