Study on reaction conditions of ethylene hydroformylation using Rh/C catalyst

김유정, 주지봉, 김우영, 오석일, 김남동, 김휘찬[1], 이종협*
서울대학교; [1]호남석유화학
(jyi@snu.ac.kr*)

Hydroformylation reaction for producing oxygenated hydrocarbons has been generally carried out in homogeneous process using phosphine-liganded catalyst. The homogeneous liganded-catalyst is not only highly toxic but also difficult to recycle and separate from product stream. Therefore, heterogeneous catalytic process system is required to overcome the above drawbacks. In this research, we prepared heterogeneous supported Rh catalysts and the prepared Rh catalysts were applied to ethylene hydroformylation. In order to optimize reaction conditions, ethylene hydroformylation was carried out by changing the temperature and pressure. The experiment results showed that the ethylene conversion dramatically increased with increase of temperature. However, the highest yield of propanal can be obtained at nearly 20atm and 180°C.