The Core Process of producing MXDA (M-XYYLENEDIAMINE) in various conditions

노성욱, 설용건*, 전유권
연세대학교
(shulyg@yonsei.ac.kr*)

The process producing MXDA was studied in various reaction conditions. Ammoxidation of meta-Xylene to isophthalonitrile and hydrogenation of isophthalonitrile to meta-xylylenediamine were performed. In the ammoxidation process, the highest selectivity of isophthalonitrile was obtained at 380°C using Vanadium/Alumina catalyst. The maximum yield of MXDA was achieved at 130°C and 800 psig. It was determined that this reaction was zero order with respect to isophthalonitrile concentration and estimated activation energy was 29.9 kJ/mol. It was also found that the concentration of ammonia and solvents were critical factors to the yield of MXDA. Among the solvents, imidazole was found to outperform in terms of MXDA yield the other samples in this study because of its high solubility of IPN.