

## 2,6 DMN synthesis from p-xylene and 1,3 butadiene

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2,6 DMN is the core intermediate of the synthesis of PEN in the highlight of the plastic market. The synthesis of DMN from para-xylene and 1,3 BD consists of two steps, alkylation and dehydrocyclization. In the first step, 1,3 BD is alkylated on the aromatic ring of para-xylene over H-beta zeolite. Alkylation has been investigated in the semi-batch where 1,3 BD flowed at 1atm. The conversion of para-xylene is 15~20% , DMBB selectivity is over 90%. Not only H-beta but also the various H-form zeolites are investigated for the alkylation. In the second step, the DMBB products at the previous step are dehydrocyclized over the catalyst on the gas phase flow reactor.

Chromia-Alumina , Pt-, Mo- related catalysts are used as the catalyst of the dehydrocyclization on the 2nd step. In case of Chromia in the range of 1~5wt% on the alumina, 2,6 DMN's selectivity is much higher than the other catalysts. Mo- related catalyst also has good selectivity and requires to enhance the catalytic modification for the more selectivity of 2,6 DMN.