Abstract

Process Economics Program Report 2H

PROPYLENE OXIDE

(September 2003)

This supplementary report presents the industry status of propylene oxide (PO) and reviews recent developments in PO manufacturing technologies since PEP Report 2G, *Propylene Oxide,* issued in December 2001. In this Report we focus on the review and technoeconomic evaluation of PO using hydrogen peroxide and PO by direct epoxidation processes.

We present technoeconomic evaluations of our interpretation of BASF's and Degussa's PO using hydrogen peroxide and AIST-Nippon Shokubai's PO by direct epoxidation processes. We also update the process economics of our interpretation of Lyondell's and Huntsman's PO/t-butyl alcohol processes, Lyondell's and Shell's PO/styrene processes, Sumitomo's PO by using cumene hydroperoxide process, and the chlorohydrin processes using lime and using cell liquor. In addition, we compare the technical aspects and economics of the above mentioned processes.

Overall, this PO report encompasses the latest technologies and process economics and provides a basis for insight into technical trends, environmental issues, and the selection of technologies.

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