

ABSTRAK

PRARANCANGAN PABRIK *N-BUTYL ACRYLATE* DARI *ACRYLIC ACID* DAN *N-BUTANOL* DENGAN KAPASITAS 55.000 TON/TAHUN

Tugas Khusus Perancangan Menara Distilasi - 301 (MD-301)

Oleh

MUHAMMAD AKBAR PAMBUDI

N-Butil Akrilat dapat di produksi dengan beberapa proses yaitu proses Esterifikasi Asam Akrilat dengan n-Butanol, dan Transesterifikasi. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, system pengolahan limbah, sistem penyediaan *steam*, *cooling water*, sistem penyediaan udara tekan, dan sistem pembangkit tenaga listrik.

Pabrik direncanakan memproduksi n-Butil Akrilat sebanyak 55.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah asam akrilat sebanyak 4.328,255 kg/jam dan n-butanol sebanyak 5.140,319 kg/jam. Lokasi pabrik direncanakan didirikan di daerah Gresik, Jawa Timur. Tenaga kerja yang dibutuhkan sebanyak 130 orang dengan bentuk badan usaha Perseroan Terbatas (PT) yang dipimpin oleh seorang Direktur Utama yang dibantu oleh Direktur Produksi dan Direktur Keuangan dengan struktur organisasi *line and staff*.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 216.126.340.336
<i>Working Capital Investment</i>	(WCI)	= Rp 38.139.942.412
<i>Total Capital Investment</i>	(TCI)	= Rp 254.266.282.749
<i>Break Even Point</i>	(BEP)	= 49,36%
<i>Shut Down Point</i>	(SDP)	= 26,74%
<i>Pay Out Time before taxes</i>	(POT) _b	= 1,32years
<i>Pay Out Time after taxes</i>	(POT) _a	= 1,59 years
<i>Return on Investment before taxes</i>	(ROI) _b	= 55,88%
<i>Return on Investment after taxes</i>	(ROI) _a	= 44,70%
<i>Discounted cash flow</i>	(DCF)	= 46,53%

Mempertimbangkan rangkuman di atas, sudah selayaknya pendirian pabrik N-Butil Akrilat ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai prospek yang baik.

ABSTRACT

DESIGN OF N-BUTYL ACRYLATE FROM ACRYLIC ACID AND N-BUTANOL CAPACITY 55,000 TON/YEAR

Design of Distillation Column - 301 (MD-301)

By

MUHAMMAD AKBAR P

N-Butyl Acrylate can be produced through esterification of acrylic acid with n-butanol as well as transesterification processes. The factory's utilities include a water treatment and supply system, a wastewater treatment system, a steam supply system, cooling water, a compressed air supply system, and a power generation system.

The factory is planned to produce 55,000 tons of n-butyl acrylate per year, operating 24 hours a day, 330 days a year. The raw materials used are 4.328,255 kg of acrylic acid per hour and 5.140,319 kg of hydrogen per hour. The factory is planned to be located in Gresik, East Java. The factory will require 130 workers, operating as a Limited Liability Company (PT), led by a President Director assisted by a Production Director and a Finance Director, with a line and staff organizational structure.

From the economic analysis obtained:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 216.126.340.336
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Considering the above summary, it is appropriate that the establishment of this N-Butyl Acrylate plant should be studied further, because it is a profitable factory and has good prospects.