ABSTRAK

PRARANCANGAN PABRIK FURFURIL ALKOHOL DARI FURFURAL DAN HIDROGEN
KAPASITAS 23.000 TON/TAHUN
Tugas Khusus Perancangan Menara Distilasi - 301 (MD-301)

Oleh

DARNI AN NISA

Furfuril alkohol dapat di produksi dengan beberapa proses yaitu proses Disproposionasi aldehida dengan NaOH, dan Hidrogenasi Furfural. 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 furfuril alkohol sebanyak 23.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah furfural sebanyak 2.292,4555 kg/jam dan hidrogen sebanyak 59,9826 kg/jam. Lokasi pabrik direncanakan didirikan di daerah Cilegon, Banten. Tenaga kerja yang dibutuhkan sebanyak 158 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:

Fixed Capital Investment	(FCI)	=	Rp 208.494.306.714
Working Capital Investment	(WCI)	=	Rp 27.987.743.485
Total Capital Investment	(TCI)	=	Rp 236.482.050.199
Break Even Point	(BEP)	=	32,54%
Shut Down Point	(SDP)	=	25,1%
Pay Out Time before taxes	$(POT)_b$	=	1,65 years
Pay Out Time after taxes	$(POT)_a$	=	1,98 years
Return on Investment before taxes	$(ROI)_b$	=	44%
Return on Investment after taxes	$(ROI)_a$	=	35,21%
Discounted cash flow	(DCF)	=	39,35%

Mempertimbangkan rangkuman di atas, sudah selayaknya pendirian pabrik Furfuril Alkohol ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai prospek yang baik.

ABSTRACT

DESIGN OF FURFURYL ALCOHOL FROM FURFURAL AND HYDROGEN CAPACITY 23,000 TON/YEAR
Design of Distillation Column - 301 (MD-301)

By

DARNI AN NISA

Furfuryl alcohol can be produced through several processes, including the disproportionation of aldehyde with NaOH and the hydrogenation of furfural. 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 23,000 tons of furfuryl alcohol per year, operating 24 hours a day, 330 days a year. The raw materials used are 2,292.4555 kg of furfural per hour and 59.9826 kg of hydrogen per hour. The factory is planned to be located in Cilegon, Banten. The factory will require 158 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:

Fixed Capital Investment	(FCI)	=	Rp 208.494.306.714
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Considering the above summary, it is appropriate that the establishment of this furfuryl alcohol plant should be studied further, because it is a profitable factory and has good prospects.