ABSTRAK

PRARANCANGAN PABRIK *DIMETHYL PHTHALATE* DARI *PHTALIC ANHYDRAT* DAN METANOL DENGAN KATALIS ASAM SULFAT KAPASITAS 27.000 TON/TAHUN

(Tugas Khusus Perancangan *Distillation Coloumn* (DC-301))

Oleh

FAREL GAFFAR PAHLAPA

Dimethyl phthalate adalah salah satu jenis *plasticizer* yang banyak digunakan, dimana dalam proses pembuatannya menggunakan *Phthalic Anhydride* yang bereaksi secara esterifikasi dengan metanol dengan bantuan katalisator H_2SO_4. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, sistem penyediaan *steam*, *cooling water*, sistem penyediaan udara tekan,dan sistem pembangkit tenaga listrik.

Kapasitas produksi pabrik direncanakan 27.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di daerah Gresik, Jawa Timur. Tenaga kerja yang dibutuhkan sebanyak 153 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 313.423.196.529,468,-
Working Capital Investment	(WCI)	= Rp 55.309.975.858,141,-
Total Capital Investment	(TCI)	= Rp 368.733.172.387,609,-
Break Even Point	(BEP)	= 42,26 %
Shut Down Point	(SDP)	= 21,34 %

Pay Out Time before Taxes	$(POT)_b$	= 2,41 tahun
Pay Out Time after Taxes	$(POT)_a$	= 2,84 tahun
Return on Investment before Taxes	$(ROI)_b$	= 26,79 %
Return on Investment after Taxes	$(ROI)_a$	= 21,43 %
Discounted Cash Flow	(DCF)	= 27,91 %

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

ABSTRACT

DESIGN OF A DIMETHYL PHTHALATE PLANT FROM PHTALIC ANHYDRIDE AND METHANOL WITH SULFURIC ACID CATALYST CAPACITY OF 27.000 TONS/YEAR
(Distillation Coloum (DC-301))

By
FAREL GAFFAR PAHLAPA

Dimethyl phthalate is a widely used type of plasticizer, which is manufactured using phthalic anhydride that reacts with methanol through esterification with the aid of an H_2SO_4 catalyst. The factory's utility requirements include water treatment and supply systems, steam supply systems, cooling water systems, compressed air supply systems, and power generation systems.

The factory's production capacity is planned to be 27.000 tons/year with 330 working days in a year. The factory is planned to be located in the Gresik area, East Java. The required workforce is 153 people, with the business entity structured as a Limited Liability Company (LLC) led by a Chief Executive Officer, assisted by a Production Director and a Finance Director, under a line- and-staff organizational structure.

Dari analisis ekonomi, diperoleh:

Fixed Capital Investment	(FCI)	= Rp 313.423.196.529,468,-
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Discounted Cash Flow	(DCF)	= 27,91 %

Considering the above summary, it is appropriate to further review the establishment of this Dimethyl Phthalate factory, as it is a profitable factory with good prospects.