

ABSTRACT

PRE DESIGN OF METHYLENE CHLORIDE PLANT FROM METHANE AND CHLORINE CAPACITY 35.000 TONS/YEAR (Distillation Column Design (DC-301))

By
RIANA OKTA LESTARI

Methylene chloride is an intermediate chemical that can be used as solvent in the paint remover industry and the manufacture of resin and also used as blowing agent in poly urethane industry.

Methylene chloride can be produced by several processes, namely 1) Chlorination Process of Methane, 2) Hydrochlorination Process of Methane, and 3) Chlorination Process of Methyl Chloride. The provision of utility needs of the plant such as water treatment and supply system, steam supply system, cooling water supply system, compressed air supply system, methane and chlorine terminal system and also power station.

This plant production capacity is planned to be 35.000 tons/year with 330 working days in a year. This plant is planned to be established in Ciomas, regency of Serang Banten Province. The form of business entity is Incorporated Company (PT) which lead by a President Director assisted by Director of Production and Finance Director in line and staff organization structure with 245 labor needed.

From the economic analysis is obtained :

<i>Fixed Capital Investment</i>	(FCI)	= Rp. 512.443.375.506
<i>Working Capital Investment</i>	(WCI)	= Rp. 56.938.152.834
<i>Total Capital Investment</i>	(TCI)	= Rp. 569.381.528.340
<i>Break Even Point</i>	(BEP)	= 44,39%
<i>Shut Down Point</i>	(SDP)	= 23,72%
<i>Pay Out Time after taxes</i>	(POT) ^a	= 2,27 years
<i>Return on Investment after taxes</i>	(ROI) ^a	= 28,43%

By considering the summary above, it is proper that the establishment of methylene chloride plant should be studied further as it is a profitable plant and has a good future prospect.

ABSTRAK

PRARANCANGAN PABRIK METILEN KLORIDA DARI METANA DAN KLORIN DENGAN KAPASITAS 35.000 TON/TAHUN (Tugas Khusus Perancangan *Distillation Column* 301 (DC-301))

Oleh
RIANA OKTA LESTARI

Metilen klorida merupakan bahan kimia antara yang dapat digunakan sebagai pelarut dalam industri *paint remover* dan pembuatan resin serta *blowing agent* dalam industri *poly urethane*.

Metilen Klorida dapat di produksi dengan beberapa proses yaitu 1) Proses Klorinasi Metana, 2) Proses Hidroklorinasi Metana dan 3) Proses Klorinasi Metil Klorida. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, sistem penyediaan *steam*, *cooling water*, sistem penyediaan udara tekan, terminal metana dan klorin serta sistem pembangkit tenaga listrik.

Kapasitas produksi pabrik direncanakan 35.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di Kecamatan Ciomas, Kabupaten Serang, Banten. Tenaga kerja yang dibutuhkan sebanyak 245 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:

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