

ABSTRACT**PREDESIGN OF *HEXAMETHYLENETETRAMINE* FROM
FORMALDEHYDE AND AMMONIA WITH CAPACITY 12.000
TONS/YEAR****(Reactor Design (RE – 201))****By****FERNANDO MEIRINALDO**

A plant to produce hexamethylenetetramine from formaldehyde and ammonia, is planned to be located at Palembang, South Sumatera. The plant is established by considering availability of raw materials, transportation facilities, readily available labor and environmental conditions.

Capacity of the plant is 12.000 tons/year operating 24 hour/day and 300 working days/year. The plant required 3302,2720 kg/h of formaldehyde; 464,3298 kg/h of ammonia.

Quantity of labor is around 150 people. The plant is managed as a Limited Liability Company (PT), which is headed by a Director. The company is organized in the form of line and staff structure.

From analysis of the plant economy is obtained:

<i>Fixed Capital Investment (FCI)</i>	=	Rp. 791.347.341.298,05
<i>Working Capital Investment (WCI)</i>	=	Rp. 139.649.530.817,30
<i>Total Capital Investment (TCI)</i>	=	Rp. 930.096.872.115,36
<i>Break Even Point (BEP)</i>	=	25,11 %
<i>Shut Down Point (SDP)</i>	=	13,22 %
<i>Pay Out Time after Taxes (POT)_a</i>	=	1,19 tahun
<i>Return on Investment after Taxes (ROI)_a</i>	=	74,32%
<i>Discounted Cash Flow (DCF)</i>	=	49,42%

By considering above the summary, it is suitable study further the hexamethylenetetramine plant since plant is profitable and has good prospects.

ABSTRAK

PRARANCANGAN PABRIK *HEXAMETHYLENETETRAMINE* DARI FORMALDEHIDA DAN AMONIA KAPASITAS 12.000 TON/TAHUN

(Perancangan Reaktor (RE – 201)

Oleh

FERNANDO MEIRINALDO

Pabrik *hexamethylenetetramine* dari formaldehida dan amonia, akan didirikan di Gresik, Sumatera Selatan. Pabrik ini berdiri dengan mempertimbangkan ketersediaan bahan baku, sarana transportasi yang memadai, tenaga kerja yang mudah didapatkan dan kondisi lingkungan.

Pabrik direncanakan memproduksi *hexamethylenetetramine* sebanyak 12.000 ton/tahun, dengan waktu operasi 24 jam/hari, 300 hari/tahun. Bahan baku yang digunakan adalah formaldehid sebanyak 3302,2720 kg/jam dan amonia sebanyak 464,3298 kg/jam.

Jumlah karyawan sebanyak 150 orang dengan bentuk perusahaan adalah Perseroan Terbatas (PT) yang dipimpin oleh seorang direktur. Sistem manajemen perusahaan menggunakan struktur organisasi *line and staff*.

Dari analisis ekonomi diperoleh:

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Mempertimbangkan paparan di atas, sudah selayaknya pendirian pabrik *hexamethylenetetranine* ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai masa depan yang baik.