

ABSTRAK

PRARANCANGAN PABRIK NORMAL BUTIRALDEHID DARI PROPILEN, KARBONMONOKSIDA, DAN HIDROGEN DENGAN KATALIS RHODIUM-TRIPENILPOSPIN DENGAN KAPASITAS 30.000 TON/TAHUN (Perancangan Distillation Column (DC-101))

**Oleh
ULFA ISLAMIA**

Pabrik normal butiraldehid berbahan baku propilen, karbonmonoksida, dan hidrogen, akan didirikan di Warnasari, Kec. Citangkil, Kota Cilegon, Banten. Pabrik ini berdiri dengan mempertimbangkan ketersediaan bahan baku, sarana transportasi yang memadai, tenaga kerja yang mudah didapatkan dan kondisi lingkungan.

Pabrik direncanakan memproduksi dekstrin sebanyak 30.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah propilen sebanyak 2.509,06 kg/jam; hidrogen sebanyak 131,44 kg/jam dan karbonmonoksida 1.840,16 kg//jam.

Jumlah karyawan sebanyak 139 orang dengan bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff*.

Dari analisis ekonomi diperoleh:

| | |
|---|--------------------------|
| <i>Fixed Capital Investment (FCI)</i> | = Rp 567.586.739.192,- |
| <i>Working Capital Investment (WCI)</i> | = Rp 100.162.365.740,- |
| <i>Total Capital Investment (TCI)</i> | = Rp 667.749.104.932 , - |
| <i>Break Even Point (BEP)</i> | = 41,92% |
| <i>Shut Down Point (SDP)</i> | = 20,05% |
| <i>Pay Out Time after Taxes (POT)_a</i> | = 3,1 tahun |
| <i>Return on Investment after Taxes (ROI)_a</i> | = 19,00% |
| <i>Internal Rate Return (IRR)</i> | = 24,99% |

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

ABSTRACT

PRADESIGN OF NORMAL BUTYRALDEHYDE PLANT FROM PROPYLENE, HYDROGEN, AND CARBONMONOXIDE WITH RHODIUM-TRYPHENYLPHOSPHINE CATALYST WITH CAPACITY 30.000 TONS/YEAR (Design Distillation Column (DC-101))

**By
ULFA ISLAMIA**

A plant to produce normal butyraldehyde from propylene, hydrogen, carbonmonoxide is planned to be located at Warnasari, Kec. Citangkil, Kota Cilegon, Banten. The plant is established by considering availability of raw materials, transportation facilities, readily available labor and environmental conditions.

Capacity of the plant is 30.000 tons/year operating 24 hour/day and 330 working days/ year. The plant required 2.509,06 kg/h propylene; 131,44 kg/h hydrogen and 1.840,16 kg/h carbonmonoxide.

Quantity of labor is around 139 people. The plant is managed as a Limited Liability Company (PT), which is headed by a Director who is assisted by a Director of Production and Director of Finance. The company is organized in the form of line and staff structure. From analysis of the plant economy is obtained:

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