

## ABSTRAK

### PRARANCANGAN PABRIK ALKYD RESIN DARI MINYAK KELAPA SAWIT ( $C_{47}H_{88}O_6$ ) DAN GLISEROL ( $C_3H_8O_3$ ) KAPASITAS 30.000 TON/TAHUN

(Perancangan Reaktor *Fixed Bed Multitube* (RE – 201))

Oleh:

**ASSYA NAURI DES HARAHAAP**

Alkyd Resin merupakan salah satu produk industri kimia yang digunakan sebagai bahan campuran pembuatan cat. Pabrik Alkyd Resin rencananya akan didirikan di kawasan industri Gresik, Jawa Timur dengan pertimbangan bahan baku, tujuan pemasaran dan sarana transportasi yang memadai. Pabrik ini direncanakan memproduksi Alkyd Resin sebanyak 30.000 ton/tahun yang beroperasi secara kontinyu dengan waktu operasi 24 jam/hari dan 330 hari/tahun.

Bahan baku yang digunakan adalah Minyak Sawit ( $C_{47}H_{88}O_6$ ) sebanyak 3.283.014 kg/jam dan Gliserol ( $C_3H_8O_3$ ) sebanyak 348.484 kg/jam.

Bentuk perusahaannya adalah Perseroan Terbatas (PT) dengan menggunakan struktur organisasi *Line and Staff* dengan jumlah karyawan sebanyak 220 orang..

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp252.790.440.635,966
<i>Working Capital Investment</i>	(WCI)	= Rp27.806.948.469,956
<i>Total Capital Investment</i>	(TCI)	= Rp280.597.389.105,922
<i>Break Even Point</i>	(BEP)	= 38,60 %
<i>Shut Down Point</i>	(SDP)	= 22,86 %
<i>Pay Out Time after taxes</i>	(POT <sub>a</sub> )	= 3,8 years
<i>Return on Invesment after taxes</i>	(ROI <sub>a</sub> )	= 11,87 %
<i>Discounted Cash Flow</i>	(DCF)	= 66,9%

Dengan memperhatikan rangkuman diatas, maka pendirian pabrik Alkyd Resin ini patut untuk dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dari segi keekonomian dan mempunyai prospek yang cukup baik.

## ABSTRACT

### PRE-DESIGN OF ALKYD RESIN FROM CRUDE PALM OIL ( $C_{47}H_{88}O_6$ ) DAN GLICEROL ( $C_3H_8O_3$ ) CAPACITY 30.000 TONS/YEAR (Design of Reactor Fixed Bed Multitube (RE – 201))

By:

**ASSYA NAURI DES HARAHA**

Alkyd Resin is one of the chemical industry products used as a mixture of paint making. The Alkyd Resin factory is planned to be established in the Gresik industrial area, East Java with consideration of raw materials, marketing purposes and adequate transportation facilities. The plant is planned to produce Alkyd Resin as much as 30,000 tons/year operating continuously with an operating time of 24 hours/day and 330 days/year.

The raw materials used are Palm Oil ( $C_{47}H_{88}O_6$ ) as much as 3,283,014 kg/hour and Glycerol ( $C_3H_8O_3$ ) as much as 348,484 kg/hour.

The company form is a Limited Liability Company (PT) using a line and staff organizational structure with a total of 220 employees.

From economic analysis obtained:

<i>Fixed Capital Investment</i>	(FCI)	= Rp252.790.440.635,966
<i>Working Capital Investment</i>	(WCI)	= Rp27.806.948.469,956
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<i>Discounted Cash Flow</i>	(DCF)	= 66,9%

By considering the summary above, the establishment of the Alkyd Resin factory deserves further study, because it is a profitable factory in terms of economy and has quite good prospects.