

## ABSTRACT

### PREDESIGN ETHYL ACRYLATE FROM ACRYLIC ACID AND ETHANOL WITH CAPACITIES 35.000 TONS/YEAR

*(Reactor Design (RE-201))*

By

AMALIA INSANI

Ethyl Acrylate is a compound used to produce coatings and adhesives. For example, latex paint formulations will produce water-repellent paints that are resistant to damage from rain, wind, and heat. Ethyl acrylate can be produced in several ways, including : 1.) propylene oxidation and 2.) esterification. Provision of factory utility needs in the form of water treatment and supply systems, steam supply systems, cooling towers, air supply and instrumentation.

Production capacity of ethyl acrylate factory is 35.000 tons/year with 330 work day for year. The factory will be located in Cilegon, Banten.

From economy analysis obtained :

<i>Fixed Capital Investment</i>	(FCI)	= Rp 411.306.358.839
<i>Working Capital Investment</i>	(WCI)	= Rp 72.583.475.089
<i>Total Capital Investment</i>	(TCI)	= Rp 483.889.833.928
<i>Break Even Point</i>	(BEP)	= 42,18%
<i>Shut Down Point</i>	(SDP)	= 16,92%
<i>Pay Out Time before taxes</i>	(POT) <sub>b</sub>	= 2,31 years
<i>Pay Out Time after taxes</i>	(POT) <sub>a</sub>	= 3,13 years
<i>Return on Investment before taxes</i>	(ROI) <sub>b</sub>	= 43,5%
<i>Return on Investment after taxes</i>	(ROI) <sub>a</sub>	= 28,71%
<i>Discounted cash flow</i>	(DCF)	= 35,71%

Based on the summary above, it is appropriate to study the establishment of a ethyl acrylate factory further, because it is a profitable plant and has a good future.

## ABSTRAK

### PRARANCANGAN PABRIK ETIL AKRILAT DARI ASAM AKRILAT DAN ETANOL DENGAN KAPASITAS 35.000 TON/TAHUN

(Perancangan Reaktor (RE-201))

Oleh

AMALIA INSANI

Etil Akrilat merupakan senyawa yang digunakan untuk memproduksi *coating* dan *adhesive*. Sebagai contoh dalam formulasi cat latex akan menghasilkan cat anti air serta tahan terhadap kerusakan akibat hujan, angin dan panas. Etil akrilat dapat diproduksi dengan beberapa cara antara lain: 1.) oksidasi propilena dan 2.) esterifikasi. Penyediaan kebutuhan utilitas pabrik berupa system pengolahan dan penyediaan air, system penyediaan *steam*, *cooling tower*, penyedia udara dan instrumentasi.

Kapasitas produksi pabrik etil akrilat direncanakan sebesar 35.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di Cilegon, Banten.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 411.306.358.839
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Berdasarkan beberapa paparan di atas, maka pendirian pabrik etil akrilat ini layak untuk dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dari sisi ekonomi dan mempunyai prospek yang relatif baik.