

ABSTRAK

PRARANCANGAN PABRIK METIL METAKRILAT DARI ASETON SIANOHIDRIN, ASAM SULFAT DAN METANOL KAPASITAS 80.000 TON/TAHUN (Tugas Khusus Perancangan Reaktor (RE-201))

Oleh

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Metil Metakrilat merupakan salah satu produk industri kimia yang digunakan pada industri polimer, industri kosmetik, industri cat, industri peralatan rumah tangga dan pada bidang kedokteran. Metil metakrilat dapat di produksi dengan beberapa proses yaitu 1) Proses Hidrolisis dan Esterifikasi, 2) Oksidasi 2 Tahap dari Isobutilena atau Isobutanol, dan 3) Kondensasi 4 tahap menggunakan Etilen. Penyediaan kebutuhan utilitas pabrik berupa sistem pengolahan dan penyediaan air, sistem penyediaan *steam*, *cooling water*, sistem penyediaan udara tekan, dan sistem pembangkit tenaga listrik.

Kapasitas produksi pabrik direncanakan 80.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di daerah Gresik, Jawa Timur. Tenaga kerja yang dibutuhkan sebanyak 163 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*.

Analisa ekonomi Prarancangan Pabrik Metil Metakrilat sebagai berikut:

<i>Fixed Capital Investment</i>	(FCI)	= Rp. 745.085.297.981,21
<i>Working Capital Investment</i>	(WCI)	= Rp.175.314.187.760,29.
<i>Total Capital Investment</i>	(TCI)	= Rp. 920.399.485.741,50
<i>Break Even Point</i>	(BEP)	= 39,35%
<i>Shut Down Point</i>	(SDP)	= 29,37%
<i>Pay Out Time before Taxes</i>	(POT) _b	= 1,17 tahun
<i>Pay Out Time after Taxes</i>	(POT) _a	= 1,42 tahun
<i>Return on Investment before Taxes</i>	(ROI) _b	= 61,28 %
<i>Return on Investment after Taxes</i>	(ROI) _a	= 49,02 %
<i>Discounted Cash Flow</i>	(DCF)	= 56,32 %

Berdasarkan pertimbangan diatas, sudah selayaknya pendirian pabrik Metil Metakrilat ini dikaji lebih lanjut karena merupakan pabrik yang menguntungkan dan mempunyai prospek yang baik.

ABSTRACT

PLANT DESIGN OF METHYL METHACRYLATE FROM ACETONE CYANOHYDRIN, SULFURIC ACID AND METHANOL CAPACITY 80,000 TONS/YEAR (Design of Reactor (RE-201))

By

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Methyl methacrylate is one of the chemical industry products used in the polymer industry, cosmetics industry, paint industry, household appliance industry, and in the field of medicine. Methyl methacrylate can be produced by several processes, namely: 1) hydrolysis and esterification process; 2) 2-stage oxidation of isobutylene or isobutanol; and 3) 4-stage condensation using ethylene. Provision of plant utility needs in the form of water treatment and supply systems, steam supply systems, cooling water, compressed air supply systems, and power generation systems. The production capacity of the plant is planned to be 80,000 metric tons per year, with 330 working days in a year. The plant is planned to be located in Gresik, East Java. The required workforce is 163 people in the form of a Limited Liability Company (PT) led by a President Director who is assisted by a Production Director and a Finance Director with a line and staff organisational structure.

The economic analysis of the Methyl Methacrylate Plant Proposal is as follows:

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Based on the above considerations, it is appropriate that the establishment of this methyl methacrylate plant be studied further because it is a profitable plant and has good prospects.