

ABSTRAK

PRARANCANGAN PABRIK GLISERIN TRINITRAT DARI GLISERIN DAN ASAM NITRAT KAPASITAS 15.000 TON/TAHUN (Perancangan *Reactor* (RE-201))

Oleh

WINTOLO

Gliserin trinitrate merupakan zat kimia yang biasa digunakan sebagai bahan dasar dari propelan jenis *double base* dan *triple base*. Gliserin trinitrate dapat dihasilkan dari proses nitrasi gliserin dengan menggunakan asam campuran yang terdiri dari asam nitrat dan asam sulfat. Penyediaan kebutuhan gliserin trinitrat dalam negeri masih sepenuhnya diperoleh dari impor, sehingga peluang untuk didirikannya pabrik gliserin trinitrat memiliki prospek yang bagus. Penyediaan utilitas pabrik berupa sistem pengolahan dan penyediaan air, sistem refrigerasi, serta penyedia udara dan instrumentasi. Kapasitas produksi pabrik gliserin trinitrat direncanakan sebesar 15.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di Tangerang, Banten. Tenaga kerja yang dibutuhkan sebanyak 170 orang dengan bentuk badan usaha Perseroan Terbatas (PT) dengan struktur organisasi *line and staff*.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 370.528.882.715
<i>Working Capital Investment</i>	(WCI)	= Rp 65.387.449.891
<i>Total Capital Investment</i>	(TCI)	= Rp 435.916.332.605
<i>Total Production Cost</i>	(TPC)	= Rp 392.249.966.176
<i>Break Even Point</i>	(BEP)	= 44,18%
<i>Shut Down Point</i>	(SDP)	= 22,97%
<i>Pay Out Time before taxes</i>	(POT) _b	= 2,36 tahun
<i>Pay Out Time after taxes</i>	(POT) _a	= 2,78 tahun
<i>Return on Investment before taxes</i>	(ROI) _b	= 27,48%
<i>Return on Investment after taxes</i>	(ROI) _a	= 21,99%
<i>Discounted cash flow</i>	(DCF)	= 22,49%

Berdasarkan hasil analisis diatas, maka pendirian pabrik gliserin trinitrat ini layak untuk dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dari sisi ekonomi dan mempunyai prospek yang relatif baik.

ABSTRACT

GLYCERIN TRINITRATE FACTORY PREDESIGN FROM GLYCERIN AND NITRIC ACID WITH CAPACITY OF 15.000 TONS/YEAR (Design of Reactor (RE-201))

By

Wintolo

Glycerin trinitrate is a chemical substance commonly used as a base material for double base and triple base propelan. Glycerin trinitrate can be produced from the nitration process of glycerine with an acid mixture consisting of nitric acid and sulfuric acid. Domestic supply of glycerin trinitrate is still fully obtained from imports, so the opportunity to establish a glycerin trinitrate factory has good prospects. Provision of plant utilities in the form of water treatment and supply systems, refrigeration systems, as well as air supply and instrumentation. The production capacity of the glycerin trinitrate plant is planned to be 15.000 tons/year with 330 working days in 1 year. The factory location is planned to be established in Tangerang, Banten. The required labor are 170 people with a business entity form Limited Liability Company (PT) with a line and staff organizational structure.

From the economic analysis are obtained:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 370.528.882.715
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Based on the results of the analysis above, then establishment of a glycerin trinitrate factory is worthy of further study, because it is a profitable factory from an economic standpoint and has relatively good prospects.