

ABSTRAK

PRARANCANGAN PABRIK ALUMINIUM KLORIDA HEKSAHIDRAT DARI ALUMINA DAN ASAM KLORIDA DENGAN KAPASITAS 35.000 TON/TAHUN

(Perancangan Crystallizer (CR-501))

Oleh

ALFRED CREYNA MUHAMMAD TAUFIKHAN

Aluminium klorida merupakan zat kimia yang banyak digunakan untuk beberapa proses kimia seperti antiperspirant/deodorant, pengolahan air, katalis dan lain-lain. Aluminium klorida umumnya dihasilkan dari reaksi antara aluminium oksida dengan asam klorida. Penyediaan kebutuhan aluminium klorida dalam negeri masih sepenuhnya diperoleh dari impor, sehingga peluang untuk didirikannya pabrik aluminium klorida memiliki prospek yang bagus. Penyediaan utilitas pabrik berupa sistem pengolahan dan penyediaan air serta penyedia udara dan instrumentasi. Kapasitas produksi pabrik aluminium klorida direncanakan sebesar 35.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di Sanggau, Kalimantan Barat. Tenaga kerja yang dibutuhkan sebanyak 136 orang dengan bentuk badan usaha Perseroan Terbatas (PT) dengan struktur organisasi *line* dan *staff*.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI) = Rp301.465.535.906
<i>Working Capital Investment</i>	(WCI) = Rp53.199.800.454
<i>Total Capital Investment</i>	(TCI) = Rp354.665.336.361
<i>Break Even Point</i>	(BEP) = 39%
<i>Shut Down Point</i>	(SDP) = 25%
<i>Pay Out Time before taxes</i>	(POT) _b = 1,58 tahun
<i>Pay Out Time after taxes</i>	(POT) _a = 2,25 tahun
<i>Return on Investment before taxes</i>	(ROI) _b = 45%
<i>Return on Investment after taxes</i>	(ROI) _a = 29%
<i>Discounted cash flow</i>	(DCF) = 36%

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

ABSTRACT

MANUFACTURING OF ALUMINIUM CHLORIDE HEXAHYDRATE FROM ALUMINA AND HYDROCHLORIC ACID WITH CAPACITY 35.000 TONS/YEARR (Design of Crytallizer(CR-501))

By

ALFRED CREYNA MUHAMMAD TAUFIKHAN

Aluminum chloride is a chemical substance that is widely used for several chemical processes such as antiperspirant/deodorant, water treatment, catalyst and others. Aluminum chloride is generally produced from the reaction between aluminum oxide and hydrochloric acid. The supply of domestic aluminum chloride needs is still entirely obtained from imports, so the opportunity to establish an aluminum chloride factory has good prospects. Provision of factory utilities in the form of water processing and supply systems as well as air and instrumentation supplies. The production capacity of the aluminum chloride factory is planned at 35,000 tons/year with 330 working days in 1 year. The factory location is planned to be established in Sanggau, West Kalimantan. The workforce required is 136 people in the form of a Limited Liability Company (PT) with a line and staff organizational structure.

From the economic analysis are obtained:

<i>Fixed Capital Investment</i>	(FCI) = Rp301.465.535.906
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Based on the results of the analysis above, the establishment of this aluminum chloride factory is worthy of further study, because it is a factory that is profitable from an economic perspective and has relatively good prospects.