ABSTRAKSI

Butil asetat merupakan salah satu ester yang berperan penting dalam industri kimia, utamanya digunakan sebagai pelarut. Selain itu, juga digunakan dalam proses *coating* dan *painting*, sebagai bahan tambahan *soft drinks*, es krim, dan keju. Butil asetat juga diaplikasikan pada industri farmasi dan bahan tambahan kosmetik, sebagai komponen perasa buatan buah-buahan.

Proses produksi butil asetat dari butanol dan asam asetat bekerja secara kontinyu di dalam reaktor alir tangki berpengaduk pada fase cair-cair. Dioperasikan pada suhu 100 °C dan tekanan 1 atm dengan menggunakan katalis asam sulfat. Pabrik dirancang dengan kapasitas 20.000 ton/tahun dengan bahan baku yang dibutuhkan antara lain butanol sebanyak 1872,0587 kg/jam dan asam asetat sebanyak 1379,8959 kg/jam, katalis asam sulfat sebanyak 9,6593 kg/jam. Pabrik bekerja selama 24 jam per hari, 7 hari per minggu, 330 hari per tahun. Pabrik direncanakan didirikan di Gresik, Jawa Timur di atas tanah seluas 22.400 m^2 dengan karyawan sejumlah 248 orang.

Diperlukan total modal investasi (*total capital investmet*) yang meliputi modal tetap (*fixed capital investment*) dan modal kerja (*working capital*) sebesar Rp 421.890.555.904,00. Total biaya produksi yang dikeluarkan setiap tahun yang terdiri atas biaya pembuatan (*manufacturing cost*) dan biaya pengeluaran umum (*general expense*) adalah sebesar Rp 526.435.450.880,00. Keuntungan yang diperoleh sebelum pajak Rp 133.564.563.456,00 dan sesudah pajak sebesar Rp 66.782.281.728,00.

Dari analisis kelayakan diperoleh *return on investment* sebelum pajak 53,47% dan sesudah pajak 26,74%. *Pay out time* sebelum pajak adalah 1,6 tahun dan sesudah pajak adalah 2,7 tahun. *Break even point* sebesar 40,45% kapasitas, *shut down point* sebesar 18,18% kapasitas, serta *discounted cash flow rate* sebesar 30,60%.

Untuk pabrik beresiko rendah, ROI sebelum pajak adalah 44%, POT maksimum sebelum pajak adalah 5 tahun, BEP 40-60%, serta suku bunga di bank berkisar 10,5%. Berdasarkan hasil analisis ekonomi di atas, maka pabrik butil asetat dari butanol dan asam asetat dengan kapasitas 20.000 ton/tahun layak dan dapat didirikan dan patut untuk ditindaklanjuti.

ABSTRACT

Butyl acetate is one of the esters which take an important role in the chemical industry, mainly used as a solvent. In the other hand, it is also used in the process of coating and painting, as an additional ingredient of soft drinks, ice cream, and cheese. Butyl acetate is also applied to the pharmaceutical industry and cosmetic additives, artificial flavorings as components of fruits.

The production process of butyl acetate from butanol and acetic acid worked continuously in the flow stirred tank reactor at liquid-liquid phase. Operated at a temperature of 100 ° C and a pressure of 1 atm by using a sulfuric acid catalyst. The plant was designed with a capacity of 20,000 tons/year with the raw materials needed include butanol as much 1872.0587 kg/hour and as much acetat acid 1379.8959 kg/h, sulfuric acid catalyst as much as 9.6593 kg/h. Factory work for 24 hours per day, 7 days per week, 330 days per year. Planned factory was established in Gresik, East Java, on a land area of 22,400 m2 with some 248 employees.

Required total capital investment which includes fixed capital investment and working capital of Rp 421,890,555,904.00. Total production costs incurred each year consisting of manufacturing cost (manufacturing cost) and general expenses is Rp 526,435,450,880.00. Profits earned before tax and after tax 133,564,563,456.00 Rp Rp 66,782,281,728.00.

Based on feasibility analysis obtained a return on investment before tax 53.47% and 26.74% after tax. Pay out time before taxes was 1.6 years and 2.7 years after tax. Break even point at 40.45% capacity, shut down point of 18.18% capacity, as well as discounted cash flow rate of 30.60%.

For low-risk plant, ROI before tax is 44%, the maximum pre-tax POT is 5 years, BEP 40-60%, as well as bank interest rates in the range of 10,5%. Based on the results of the economic analysis of the above, then plant butanol and butyl acetate from acetic acid with a capacity of 20,000 tons/year feasible and can be established and should be followed up.