

INTISARI

Pabrik Metilanilin dari Klorobenzena dan Metilamina dengan kapasitas 55.000 Ton/Tahun beroperasi selama 330 hari/tahun dan 24 jam/hari. Untuk mencapai kapasitas produksi tersebut, dibutuhkan Klorobenzena sebanyak 8.024,11 kg/jam dan Metilamina sebanyak 11.070,08 kg/jam sebagai bahan baku utama. Reaksi antara Klorobenzena dan Metilamina berlangsung di dalam reaktor alir tangki berpengaduk dengan Cu_2Cl_2 sebagai katalis. Untuk menghilangkan produk samping, Metilamin Hidroklorida direaksikan dengan NaOH dan menghasilkan produk berupa Metilamina dan NaCl. Selanjutnya, sisa reaktan dipisahkan dari produk berdasarkan titik didihnya.

Pabrik ini direncanakan akan didirikan di Kabupaten Serang, Banten dengan luas tanah 3,75 ha dan mempekerjakan 250 orang karyawan. Kebutuhan energi untuk menjalankan pabrik ini meliputi kebutuhan listrik sebanyak 1,48 MW. Sedangkan kebutuhan air untuk utilitas adalah sebanyak 84.620,8634 kg/jam.

Untuk menjalankan produksi, dibutuhkan modal tetap sebesar \$ 58.114.360,16 + Rp113.641.477.541,14 dan modal kerja sebesar \$69.739.443,38 + Rp4.819.557.342,76. Berdasarkan evaluasi ekonomi yang dilakukan, pabrik Metilanilin ini tergolong *high risk* dengan nilai ROI 48,26%, POT 1,72 tahun, BEP 43,87%, SDP 30,19%, dan DCFRR 21,05%. Berdasarkan nilai-nilai diatas, dapat disimpulkan bahwa pabrik ini menarik secara ekonomi dan layak untuk dikaji lebih lanjut.

ABSTRACT

The Methylaniline plant from Chlorobenzene and Methylamine aims to assess the feasibility of the plant to be established. The Methylaniline plant is designed to operate continuously with a capacity of 55,000 tons / year for 330 days / year and 24 hours / day. To achieve this production capacity, Chlorobenzene is needed as much as 8.024,11 kg / hour and Methltamine as much as 11.070,08 kg / hour as the main raw material. The reaction between Chlorobenzene and Methylamine takes place in a Continuous Strired Tank Reactor (CSTR) with Cu_2Cl_2 as a catalyst. To eliminate side products, Methylamine Hydrochloride is reacted with NaOH and produce a product in the form of Methylamine and NaCl. Next, the remaining reactants are separated from the product based on their boiling point.

The plant is planned to be established in Serang, Banten with a land area of 3.75 ha and employing 250 employees. The energy needs to run this plant include 1,48 MW of electricity. While the need for water for process and utilities is 84.620,8634 kg/ hour.

To run the production, it requires fixed capital of \$ 58.114.360,16 + Rp113.641.477.541,14 and working capital of \$69.739.443,38 + Rp4.819.557.342,76. Based on the economic evaluation conducted, the Methylaniline plant is classified as high risk with a ROI of 48,26%, POT 1,72 years, BEP 43,87%, SDP 30,19%, and DCFRR 21,05%. Based on the above values, it can be concluded that this plant is economically attractive and deserves further study.