ABSTRACT

This methyl chloride from methanol and hydrochloride acid plant is designed with the capacity of 40,000 ton/year, with minimum 99.50 % methyl chloride content in the product. This plant will operate 330 days a year. This plant will need methanol as raw matereal 28.072 tons/year and hydrochloride acid 79.673 tons/year. We plan to build this plant at industrial zone in east Kalimantan, will use about 5 hectar area and 135 total workers. This methyl chloride production could be devided into three major step, the first step is raw matereal preparation, vapourize methanol and hydrocloride and make theese vopours suitable as reactor feed at 623 K and 1.30 atm. The next step is chemical reaction between methanol vapour and hydrochloride acid vapour over alumina gel catalist with 95 % of methanol is converted to methyl choride. The last step from methyl chloride production is product purification with minimum 99.50 % methyl choride content in the product. This plant will need water about 20,000 kg water/hour, *fuel oil* about 705 kg/j kg/hour, plant and pressure control air 27.820 kg/j, and total electricity 500 kW. The plant will need total *fixed capital investment* Rp 244,000,000,000.-, and working capital Rp.247.015.895.850,-. This is low risk plant, from economic evaluation we know that net profit after taxes about Rp 52,881,711,763.-/ year, with *Rate of Return on Investment* (ROI) 21.69 % , *Pay out Time* (POT) 3.16 years, *Break Event Point* (BEP) 44,678 % design capacity, *Shut Down Point* (SDP) 25,923 % design capacity, and *Discounted Cash Flow* (DCF) 32,52%. Base on theese results we have conclusion that this methyl choride from methanol and hydrochloride acid plant with capacity 40,000 tons product /year is interesting.