ABSTRACT

PRADESIGN OF ISOPROPANOLAMINE PLANT
FROM PROPYLENE OXIDE AND AMMONIA
CAPACITY 15.000 TONS/YEAR
(Design Reactor (RE-201))

By

ADELINA

A plant to produce isopropanolamine from propylene oxide and ammonia is planned to be located at Tanjung Siapi-API, Palembang, South Sumatera. The plant is established by considering availability of raw materials, transportation facilities, readily available labor and environmental conditions.

Capacity of the plant is 15,000 tons/year operating 24 hour/day and 330 working days/year. The plant required 1746,11 kg/hr propylene oxide and 2944,534 kg/hr ammonia.

Quantity of labor is around 143 people. The plant is managed as a Limited Liability Company (PT), which is headed by a Director who is assisted by a Director of Production and Director of Finance. The company is organized in the form of line and staff structure. From analysis of the plant economy is obtained:

- Fixed Capital Investment (FCI) = Rp 240,590,020,360,-
- Working Capital Investment (WCI) = Rp 42,457,062,416,-
- Total Capital Investment (TCI) = Rp 283,047,082,776,-
- Break Even Point (BEP) = 55%
- Shut Down Point (SDP) = 25,11%
- Pay Out Time after Taxes (POT) = 2,63 year
- Return on Investment after Taxes (ROI) = 23,75 %
- Internal Rate Return (IRR) = 29,17%
- Annual Net Profit (Pa) = Rp 67,247,410,190/year

By considering above the summary, it is suitable study further the isopropanolamine plant since plant is profitable and has good prospects.