ABSTRACT

PRADESIGN OF PARALDEHYDE PLANT
FROM ACETALDEHYDE WITH SULFONIC ACID AND PHOSPORIC ACID
CAPACITY 21.000 TONS/YEAR
(Design Distilation Column (DC-301))

By

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A plant to produce paraldehyde from acetaldehyde is planned to be located at Kawasan Industri Gresik, Gresik, East Java. The plant is established by considering availability of raw materials, transportation facilities, readily available labor and environmental conditions.

Capacity of the plant is 21.000 tons/year operating 24 hour/day and 330 working days/year. The plant required 2810.69 kg/hr acetaldehyde, 5,62 kg/hr sulfonic acid, and 11,24 kg/hr phosporic acid.

Quantity of labor is around 132 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 810.504.088.778,-
Working Capital Investment (WCI) = Rp 143.030.133.314,-
Total Capital Investment (TCI) = Rp 953.534.222.092,-
Break Even Point (BEP) = 55%
Shut Down Point (SDP) = 25,97%
Pay Out Time after Taxes (POT)\(a\) = 2,64 tahun
Return on Investment after Taxes (ROI)\(a\) = 23,64 %
Internal Rate Return (IRR) = 30,7%
Annual Net Profit (Pa) = Rp 258.239.203.406/tahun

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