

## ABSTRACT

### MANUFACTURE OF FURFURYL ALCOHOL FROM FURFURAL AND HYDROGEN CAPACITY 20.000 TONS/YEAR (Design Distillation Column -301 (DC-301))

By

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*Furfuryl alcohol* plant produced by reacting furfural and hydrogen is planned to be in industrial factory in the region of Gresik in East Java Province. Plant will be established by considering the availability of raw materials, transportation facilities, readily available labor and environmental conditions.

Production capacity is planned 20,000 tons/year, with operating time of 24 hours/day and 330 working days in a year. The raw materials used are much furfural 2.474,2217 kg/hr and hydrogen as 52,4618 kg/hr.

Provision of utility plant needs a treatment system and water supply, steam supply systems, instrument air supply systems, and power generation systems. Labor needed as many as 135 people with a business entity form Limited Liability Company (PT) which is headed by a Director who is assisted by the Director of Production and Director of Finance with line and staff organizational structure.

From the economic analysis is obtained:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 158.597.213,0830
<i>Working Capital Investment</i>	(WCI)	= Rp 27.987.743,4850
<i>Total Capital Investment</i>	(TCI)	= Rp 186.584.956,5680
<i>Break Even Point</i>	(BEP)	= 46,9259 %
<i>Shut Down Point</i>	(SDP)	= 33,8764 %
<i>Pay Out Time before taxes</i>	(POT) <sub>b</sub>	= 2,8265 years
<i>Pay Out Time after taxes</i>	(POT) <sub>a</sub>	= 3,3000 years
<i>Return on Investment before taxes</i>	(ROI) <sub>b</sub>	= 43,0100 %
<i>Return on Investment after taxes</i>	(ROI) <sub>a</sub>	= 34,4100 %
<i>Discounted cash flow</i>	(DCF)	= 39,8589 %

Consider the summary above, it is proper establishment of furfuryl alcohol plant to studied further, because the plant is profitable and has good prospects.