

ABSTRACT

PREDESIGN MANUFACTURING OF SALICYLIC ACID FROM PHENOL AND SODIUM HYDROXIDE WITH CAPACITY OF 40.000 TONS/YEAR (Reactor 201(RE-201) Design)

By

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Salicylic acid is one of the chemical industry products that used as a intermediate product, pharmaceutical and cosmetic.

Salicylic acid demand in Indonesia is increased every year and it's still imported from abroad. Afterwards the global demand is getting increased by the increase of industry development - Salicylic acid user industries for their raw material, therefore Salicylic acid plant has a big role to support the industrial development both in Indonesia and abroad.

Salicylic acid is produced by reacting phenol and sodium hydroxide form sodium phenolate at 92°C, then carbon dioxide added to the sodium phenolate forms sodium phenyl carbonate. Sodium phenyl carbonate transformed into sodium salicylate at 170 °C, and the last stage is sodium phenolate react with sulfuric acid and the product is salicylic acid.

It is planned to build with the capacity of 40,000 tons / year with 330 working days in a year. Manufacturing site for the industrial park is found in the region of Tuban in East Java Province. The workers needed is 184 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.

Provision of utility plant needs a treatment system and water supply, steam supply systems, chilled ammonia, instrument air supply systems, and power generation systems.

From the economic analysis, it is obtained that:

<i>Fixed Capital Investment</i>	(FCI)	=Rp936.480.682.308
<i>Working Capital Investment</i>	(WCI)	= Rp165.261.296.878
<i>Total Capital Investment</i>	(TCI)	= Rp1.101.741.979.186
<i>Break Even Point</i>	(BEP)	= 43,651 %
<i>Shut Down Point</i>	(SDP)	= 27,26%
<i>Pay Out Time after taxes</i>	(POT) _a	= 2,25 year
<i>Return on Investment after taxes</i>	(ROI) _a	= 38,09%
<i>Discounted cash flow</i>	(DCF)	= 39%

Considering the summary above, it is proper that the establishment of salycilic acid plant studied further, because the plant is profitable and has a good prospect.