

ABSTRAK

PRARANCANGAN PABRIK METIL LAKTAT ($C_4H_8O_3$) DARI ASAM LAKTAT ($C_3H_6O_3$) DAN METANOL (CH_3OH) KAPASITAS 21.000 TON/TAHUN (Perancangan *Distillation Coloumn* (DC-303))

Oleh

EVA MAYANTI

Metil laktat merupakan salah satu bahan kimia yang digunakan sebagai pelarut (*solvent*) dalam bidang kosmetik dan farmasi, pelarut resin, pelarut tinta, dan pembersih material logam dan komposit seperti PCB (*Printed Circuit Board*). Bahan baku yang digunakan adalah asam laktat sebanyak 2.834,3740 kg/jam dan metanol sebanyak 4.002,3199 kg/jam. Kapasitas produksi pabrik direncanakan sebesar 21.000 ton/tahun dengan 330 hari kerja dalam 1 tahun dan didirikan di Kota Bontang, Kalimantan Timur. Bentuk perusahaan adalah badan usaha Perseroan Terbatas (PT) menggunakan struktur organisasi *line and staff* dengan jumlah karyawan sebanyak 174 orang.

Analisa ekonomi Prarancangan Pabrik Metil Laktat sebagai berikut:

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|---|-----------------------|
| <i>Fixed Capital Investment</i> (FCI) | = Rp354.231.142.736,- |
| <i>Working Capital Investment</i> (WCI) | = Rp62.511.378.130,- |
| <i>Total Capital Investment</i> (TCI) | = Rp416.742.520.866,- |
| <i>Break Even Point</i> (BEP) | = 43,65% |
| <i>Shut Down Point</i> (SDP) | = 24,70% |
| <i>Pay Out Time after Taxes</i> (POT) ^a | = 2,33 tahun |
| <i>Return on Investment before Taxes</i> (ROI) ^b | = 34,93% |
| <i>Return on Investment after Taxes</i> (ROI) ^a | = 27,95% |
| <i>Discounted Cash Flow</i> (DCF) | = 35,01% |

Berdasarkan pertimbangan diatas, sudah selayaknya pendirian pabrik Metil Laktat ini dikaji lebih lanjut karena merupakan pabrik yang menguntungkan dan mempunyai prospek yang baik.

Kata kunci: Metil Laktat, Asam Laktat, Metanol, Ekonomi

ABSTRACT

MANUFACTURING OF METHYL LACTATE (C₄H₈O₃) FROM LACTIC ACID (C₃H₆O₃) AND METHANOL (CH₃OH) CAPACITY 21.000 TONS/YEAR (Design of Distillation Coloumn (DC-303))

Oleh

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Methyl lactate is a chemical used as a solvent in the cosmetic and pharmaceutical fields, resin solvent, ink solvent, and cleaner for metal and composite materials such as PCB (Printed Circuit Board). The raw materials used consist of 2.834,3740 kg/hour of lactic acid and 4.002,3199 kg/hour of methanol. Production capacity is planned at 21.000 tons/year with 330 working days in a year and will be established in Bontang City, East Kalimantan. The company form is a Limited Liability Company (PT) using a line and staff organizational structure with a total of 174 employees.

An economic analysis of preliminary plant design of Methyl Lactate are:

| | |
|--|-----------------------|
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Based on the above considerations, the establishment of the Methyl Lactate factory should be studied further, because it is a profitable factory and has a good prospect.

Key words: Methyl Lactate, Lactic Acid, Methanol, Economic