

## ABSTRACT

### MANUFACTURE OF ACETIC ACID FROM OXIDATION OF ACETALDEHYDE CAPACITY 75.000 TONS/YEAR (Design of Distillation Column(DC-301))

By

**Fahmi Alzie Putra**

Acetic acid plant from oxidation Acetaldehyde will be build in Sayung sub-district, Demak district, Central Java. Establishment of this plant in Sayung sub-district, due to raw material resources, transportation, labors and also environmental condition.

This plant will produce 75.000 tons/year, with time of operation 24 hours/day, and 330 days on a year. The raw material which use are Acetaldehyde 7.313,830 kg/hour, Air 24.136 kg/hour and Manganese acetate 14,62 kg/hour.

This plant has utility units which the function are for water supply, steam, power generation, and air supply. The bussines entity of this plant is limited liability company (PT) and using line and staff structure with 180 labors.

From financial annalyze:

Fixed Capital Investment	(FCI)	= Rp 436.965.592.351
Working Capital Investment	(WCI)	= Rp 77.111.575.121
Total Capital Investment	(TCI)	= Rp 437.769.256.606
Break Even Point	(BEP)	= 21,5 %
Shut Down Point	(SDP)	= 9,05 %
Pay Out Time before taxes	(POT) <sub>b</sub>	= 1,21 year
Pay Out Time after taxes	(POT) <sub>a</sub>	= 1,47 year
Return on Investment before taxes	(ROI) <sub>b</sub>	= 61,47 %
Return on Investment after taxes	(ROI) <sub>a</sub>	= 49,18 %
Discounted Cash Flow	(DCF)	= 50,49 %

Consider the summary above, it is proper establishment of Acetic acid plant from oxidation Acetaldehyde is studied further, because the plant is profitable and has good prospects.

## ABSTRAK

### PRARANCANGAN PABRIK ASAM ASETAT DARI OKSIDASI ASETALDEHIDA DENGAN KAPASITAS 75.000 TON/TAHUN (Pra-rancangan Menara Distilasi (MD-301))

Oleh

Fahmi Alzie Putra

Pabrik Asam Asetat dari Oksidasi Asetaldehida, akan didirikan di kecamatan Sayung, Kabupaten Demak, Jawa Tengah. Pabrik ini berdiri dengan mempertimbangkan ketersediaan bahan baku, sarana transportasi yang memadai dan tenaga kerja yang didapatkan.

Pabrik direncanakan memproduksi Asam Asetat sebanyak 75.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah Asetaldehida sebanyak 7.313,830 kg/jam, udara sebanyak 24.136 kg/jam dan Mangan Asetat sebanyak 14,62 kg/jam.

Penyediaan kebutuhan utilitas pabrik berupa pengadaan air, *steam*, listrik, udara instrumen. Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 180 orang.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 436.965.592.351
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<i>Total Capital Investment</i>	(TCI)	= Rp 437.769.256.606
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Mempertimbangkan paparan di atas, sudah selayaknya pendirian pabrik Pabrik Asam Asetat dari Oksidasi Asetaldehida ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai masa depan yang baik.