

ABSTRAK

PRARANCANGAN PABRIK ASAM FORMIAT DARI METIL FORMIAT DAN AIR DENGAN KAPASITAS PRODUKSI 40.000 TON/TAHUN

Oleh

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Asam formiat merupakan bahan kimia penting yang banyak digunakan dalam industri karet, tekstil, penyamakan kulit, pengawet pakan ternak, serta sebagai *intermediate* dalam industri kimia. Seiring dengan meningkatnya kebutuhan asam formiat di dalam negeri, diperlukan perancangan pabrik asam formiat yang efisien dan berkelanjutan. Oleh karena itu, prarancangan pabrik asam formiat dilakukan menggunakan bahan baku metil formiat dan air melalui reaksi hidrolisis. Kapasitas produksi pabrik direncanakan 40.000 ton/tahun dengan 330 hari kerja selama 24 jam dalam 1 tahun. Lokasi pabrik direncanakan didirikan di Kabupaten Gresik, Jawa Timur. Tenaga kerja yang dibutuhkan sebanyak 116 orang dengan bentuk badan usaha Perseroan Terbatas (PT) yang dipimpin oleh seorang Direktur Utama yang dibantu oleh Direktur Produksi dan Direktur Keuangan dengan struktur organisasi *line and staff*.

Analisa kelayakan prarancangan pabrik asam formiat sebagai berikut :

Fixed Capital Investment (FCI) = Rp763.310.072.892,436

Working Capital Investment (WCI) = Rp120.522.643.088,279

Total Capital Investment (TCI) = Rp803.484.287.255,196

Break Even Point (BEP) = 53,04 %

Pay Out Time before Taxes (POT)_b = 2,45 tahun

Pay Out Time after Taxes (POT)_a = 2,89 tahun

Return on Investment before Taxes (ROI)_b = 45,05 %

Return on Investment after Taxes (ROI)_a = 36,04 %

Discounted Cash Flow (DCF) = 48,86 %

Shut Down Point (SDP) = 27,93 %

Mempertimbangkan rangkuman di atas, sudah selayaknya pendirian pabrik *asam formiat* ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai prospek yang baik.

ABSTRACT

MANUFACTURING OF A FORMIC ACID PLANT FROM METHYL FORMIATE AND WATER WITH A PRODUCTION CAPACITY OF 40,000 TONS/YEAR

By

Ike Junita

Formic acid is an important chemical widely used in the rubber, textile, leather tanning, animal feed preservative, and chemical industries. With the increasing domestic demand for formic acid, an efficient and sustainable formic acid plant is required. Therefore, the preliminary design of the formic acid plant is carried out using methyl formiate and water as raw materials through a hydrolysis reaction. The plant's production capacity is planned to be 40,000 tons/year with 330 24-hour working days per year. The plant is planned to be located in Gresik Regency, East Java. The plant will require 116 workers, and will be established as a Limited Liability Company (PT) led by a President Director assisted by a Production Director and a Finance Director, with a line and staff organizational structure.

Analysis of the feasibility of pre-designing a formic acid plant is as follows:

Fixed Capital Investment (FCI) = IDR 763,310,072,892,436

Working Capital Investment (WCI) = IDR 120,522,643,088,279

Total Capital Investment (TCI) = IDR 803,484,287,255,196

Break Even Point (BEP) = 53.04 %

Pay Out Time before Taxes (POT)_b = 2.45 years

Pay Out Time after Taxes (POT)_a = 2.89 years

Return on Investment before Taxes (ROI)_b = 45.05 %

Return on Investment after Taxes (ROI)_a = 36.04 %

Discounted Cash Flow (DCF) = 48.86 %

Shut Down Point (SDP) = 27.93 %

Considering the summary above, it is appropriate to further study the establishment of this formic acid plant, as it is a profitable plant with good prospects.