

ABSTRAK

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Program Studi : Teknik Kimia
Judul : Pra Rancangan Pabrik Kalium Dikromat
Kapasitas Produksi 10.000 Ton/Tahun.

Pabrik Kalium Dikromat dengan Kapasitas 10.000 ton/tahun akan didirikan di Kawasan Barru, Kab Barru Sulawesi Selatan dikarenakan dekat dengan lokasi sumber bahan baku batuan kromit. Pendirian Pabrik dimulai awal tahun 2019 dan akan mulai beroperasi pada awal tahun 2021. Proses yang akan digunakan adalah Reaktor RATB (CN Patent 1275864 C) yang dilakukan secara langsung pada suhu 220°C dan tekanan 2 atm dengan produk utama Kalium Dikromat. Untuk menunjang proses produksi Kalium Dikromat, pabrik dilengkapi dengan unit utilitas, yang terdiri dari unit pengadaan steam 1.764,4489 kg/jam, unit pengadaan air domestik 447,5660 kg/jam, unit pengadaan air pendingin 668,3660 kg/jam, unit listrik 275 KWh, dan unit bahan bakar 4.760,8455 kg/jam. Pabrik Kalium Dikromat direncanakan berbadan hukum perseroan terbatas (PT) perusahaan ini dipimpin oleh seorang direktur dengan jumlah karyawan 258 orang. Berdasarkan analisa ekonomi didapatkan data sebagai berikut:

1. Total Modal Investasi (TCI) = IDR 3.9 T
 - Modal Sendiri (68,60%) = IDR 5.3 T
 - Pinjaman Bank (31,40%) = IDR 2.4 T
2. Internal Rate of Return (IRR) = 42,98%
3. Minimum Payback Periode (MPP) = 2 Tahun 6 Bulan
4. Net Cash Flow Present Value (NCFPV) = IDR 1.6 T

Maka pabrik Kalium Dikromat dengan kapasitas 10.000 ton/tahun layak (*feasible*) untuk didirikan.

Kata Kunci : Kalium Dikromat, IRR, MPP, NCFP

ABSTRACT

Name : Satria Winanda (1141420042)
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Study Program : Chemical Engineering
Project Name : Pre Designed Factory of Potassium Dichromate
Production Capacity 10.000 Ton/Year

Potassium Dichromate Plant with a capacity of 10,000 tonnes / year will be established in Barru, South Sulawesi because connection with the location of the source of raw material for chromite rock. The establishment of the plant began in early 2019 and will be operational in early 2021. The process to be used is RATB Reactor (CN Patent 1275864 C) carried out at 220 °C and a pressure of 2 atm with the main products Potassium Dichromate. To support the process of production of Potassium Dichromate, the factory is equipped with a utility unit. The unit utilities includes procurement unit of steam 1.764,4489 kg/hour, domestic water supply unit 447,5660 kg/hour, the cooling water supply unit 668,3660 kg/hour, the unit procurement of electricity 275 KWh and fuel procurement unit 4.760,8455 kg/hour. Potassium Dichromate Plant planned incorporated Limited Liability Company (PT). The company is headed by a director with a number of employees 258 people. Based on economic analysis, the data are as follows:

1. Total Cost Investment (TCI) = IDR 3.9 T
 - Own Capitas (68,60,54%) = IDR 5.3 T
 - Bank Loans (31,40%) = IDR 2.4 T
2. Internal Rate of Return (IRR) = 42,98%
3. Minimum Payback Periode (MPP) = 2 Years 6 Month
4. Net Cash Flow Present Value (NCFPV) = IDR 1.6 T

The Potassium Dichromate Plant with a capacity of 10,000 tons per year is feasible

Keyword : Potassium Dichromate, IRR, MPP, NCFPV