

ABSTRACT

PREDESIGN METIL ETIL KETON PLANT FROM 2-BUTANOL WITH DEHYDROGENATION PROCESS CAPACITY 30.000 TON/YEARS (Specialized Task of Design Reactor (RE-201))

By

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For the most part, Metil Etil Keton (MEK) are used as *solvent* such as: *nitrocellulose* and *acrylic*. Beside as *solvent*, MEK also used as *adhesives*, *magnetic tapes*, print ink, and as chemical *intermediate* at antioxcidan and, parfum dan catalyst production.

Necesity of MEK in Indonesiaan is relative increase every years and during of MEK needing still impor from abroad . So building of *Metil Etil Keton* plant is very important for accsesbilty of domestic required.

Metil Etil Keton is production by dehydrogenation 2-butanol in Reator fixed bed multitubular at temperature 250°C dan pressure 3 atm . Product From reactor are hidrogen gas, Metil Etil Keton, water,dan inert of 2-butanol. Hidrogen gas is separating in separator drum, then Mixedof Metil Etil Keton was purified bydistilation colom with 99,70% purity.

Capacity of production Plant is planning 30.000 ton/years with 330 day working in one year.Location of plant is planning at region industries in Serang, Province of Banten. The labors are needed 160 peoples with company form Perseroan Terbatas (PT) who headed by Chief executive officer and help by Director Production and Director of Finance with structure of organization is *line and staff*.

For Unit utilities plant are watter unit, steam unit, compress air unit, *refrigerant* unit an electric power generating unit.

From economic analysis were obtained :

<i>Fixed Capital Investment</i>	(FCI)	= Rp. 72.919.712.787
<i>Working Capital Investment</i>	(WCI)	= Rp. 12.868.184.609
<i>Total Capital Investment</i>	(TCI)	= Rp. 85.787.897.396
<i>Break Even Point</i>	(BEP)	= 32 %
<i>Shut Down Point</i>	(SDP)	= 26,36 %
<i>Pay Out Time before taxes</i>	(POT) _b	= 1,41 years
<i>Pay Out Time after taxes</i>	(POT) _a	= 2 years
<i>Return on Investment before taxes</i>	(ROI) _b	= 79,37 %
<i>Return on Investment after taxes</i>	(ROI) _a	= 67,47 %
<i>Discounted cash flow</i>	(DCF)	= 56,25 %

Consider the above summary, its proper establishment of the MEK Plant is explored further, because the plant is profitable and it has good prospects.