

CHAPTER 9

Conclusions&Recommendations

9.1. Conclusions:

- As shown in this study it is possible to produce 112,200tons /y of MTBE with a purity of about 95% at a conversion of 80%.
- The design parameters of the selected distillation are: height 34.6 m, number of trays 84 and diameter 1.32m.
- The specifications of the reactor needed for the process are: volume 65 m³, height 24.8.m, and diameter 1.8m.
- The estimated payback period (PBP) is 3.7 years at an internal rate of return (IRR) of 0. 27
- Depending on the above conclusions it is economically feasible to establish an MTBE plant in Sudan

9.2. Recommendations:

- Increasing annual frequency of renewing the catalyst increases conversion and reduces the flow rate of the limited-supply isobutylene. However, this may affect negatively costs and profitability due to the high price of the catalyst hence an optimization technique must be applied to determine the optimum values of these parameters.
- It is recommended to perform an effective control study to construct effective system controlling the critical parameters.
- This study can be extended to investigate the feasibility of planning a process that meets the foreign markets demand of MTBE.