

DAFTAR ISI

| | |
|--------------------------------------|----|
| SAMPUL | 1 |
| LEMBAR PENGESAHAN | 2 |
| PERNYATAAN..... | 3 |
| PRAKATA..... | 4 |
| DAFTAR ISI..... | 5 |
| INTISARI..... | 10 |
| <i>ABSTRACT</i> | 11 |
| BAB 1. PENGANTAR | 12 |
| 1.1. Latar Belakang | 12 |
| 1.2. Tinjauan Pustaka | 13 |
| 1.3. Pemilihan Proses | 17 |
| 1.4. Market Analysis | 18 |
| 1.5. Pemilihan Lokasi..... | 19 |
| BAB 2. URAIAN PROSES | 23 |
| 2.1. Tahap Persiapan Bahan Baku..... | 23 |
| 2.2. Tahap Sintesis Produk..... | 24 |
| 2.3. Tahap Pemurnian Produk..... | 24 |
| BAB 3. SPESIFIKASI BAHAN | 26 |
| 3.1. Bahan Baku | 26 |
| 3.2. Bahan Pendukung | 27 |
| 3.3. Produk | 28 |
| BAB 4. DIAGRAM ALIR | 29 |
| BAB 5. NERACA MASSA | 32 |
| 5.1. Neraca Massa Keseluruhan | 32 |

| | |
|---|----|
| 5.2. Neraca Massa Tiap Alat | 32 |
| BAB 6. NERACA PANAS | 38 |
| 6.1. Neraca Panas <i>Overall</i> | 38 |
| 6.2. Neraca Panas Setiap Alat | 39 |
| BAB 7. SPESIFIKASI ALAT | 49 |
| 7.1. <i>Heat Exchanger</i> -307 (E-307) | 49 |
| 7.2. <i>Heat Exchanger</i> -101 (E-101) | 50 |
| 7.3. <i>Heat Exchanger</i> -102 (E-102) | 51 |
| 7.4. <i>Heat Exchanger</i> -103 (E-103) | 52 |
| 7.5. <i>Heat Exchanger</i> -104 (E-104) | 53 |
| 7.6. <i>Heat Exchanger</i> -105 (E-105) | 54 |
| 7.7. <i>Heat Exchanger</i> -106 (E-106) | 56 |
| 7.8. <i>Heat Exchanger</i> -201 (E-201) | 57 |
| 7.9. <i>Heat Exchanger</i> - 305 (E-305) | 58 |
| 7.10. <i>Heat Exchanger</i> - 306 (E-306) | 59 |
| 7.11. <i>Heat Exchanger</i> -308 (E-308) | 60 |
| 7.12. <i>Condenser</i> -202 (E-202) | 61 |
| 7.13. <i>Condenser</i> MD – 302 (E-303) | 62 |
| 7.14. <i>Condenser</i> MD – 301 (E-301) | 63 |
| 7.15. Reboiler MD – 302 (E-304) | 64 |
| 7.16. Reboiler MD – 301 (E-302) | 65 |
| 7.17. Kompresor (C-101) | 66 |
| 7.18. Kompresor (C-102) | 67 |
| 7.19. Pompa 01 (P-101) | 67 |
| 7.20. Pompa 02 (P-102) | 68 |
| 7.21. Pompa 03 (P-103) | 69 |

| | |
|---|------------|
| 7.22. Pompa 04 (P-302) | 70 |
| 7.23. Pompa 05 (P-303) | 71 |
| 7.24. Pompa 06 (P-304) | 72 |
| 7.25. Blower (P-103)..... | 73 |
| 7.26. <i>Expansion Valve</i> (EV-201) | 73 |
| 7.27. Akumulator MD-302 (V-302)..... | 74 |
| 7.28. Akumulator MD-301 (V-301)..... | 74 |
| 7.29. Reaktor (R-201) | 75 |
| 7.30. <i>Knockout Drum</i> (KD-101) | 76 |
| 7.31. <i>Knockout Drum</i> (KD-201) | 76 |
| 7.32. Tangki Penyimpanan (TK-101) | 77 |
| 7.33. Tangki Penyimpanan (TK-102) | 78 |
| 7.34. Tangki Penyimpanan (TK-301) | 78 |
| 7.35. Menara Distilasi Ekstraktif (E – 301) | 79 |
| 7.36. Menara Distilasi (E – 302) | 80 |
| BAB 8. UTILITAS | 81 |
| 8.1. Unit Penyediaan dan Pengolahan Air | 81 |
| 8.2. Unit Pembangkit Steam..... | 143 |
| 8.3. Unit Penyedia Udara Instrumen | 146 |
| 8.4. Unit Pembangkit Listrik..... | 150 |
| 8.5. Unit Pengolahan Limbah..... | 153 |
| 8.6. Unit Cooling Tower | 158 |
| BAB 9. TATA LETAK PABRIK | 166 |
| BAB 10. PERTIMBANGAN ASPEK SHE | 168 |
| 10.1. Manajemen <i>Safety</i> | 168 |
| 10.2. Manajemen <i>Health</i> | 169 |

| | |
|--|------------|
| 10.3. Manajemen Environment | 175 |
| BAB 11. ORGANISASI PERUSAHAAN | 214 |
| 11.1. Bentuk Perusahaan | 214 |
| 11.2. Struktur Organisasi | 214 |
| 11.3. Tugas dan Wewenang | 216 |
| 11.4. Pembagian Jam Kerja Karyawan | 225 |
| 11.5. Sistem Penggajian Karyawan..... | 226 |
| 11.6. Penggolongan Jabatan | 228 |
| 11.7. Kesejahteraan Sosial Karyawan..... | 229 |
| BAB 12. EVALUASI EKONOMI..... | 232 |
| 12.1. Perhitungan Indeks Harga | 232 |
| 12.2 Perhitungan Harga Alat Proses dan Utilitas..... | 234 |
| 12.3. Perhitungan Biaya <i>Raw Material</i> , <i>Sales</i> , dan Bahan Utilitas..... | 240 |
| 12.4. Perhitungan Biaya Pekerja Pembangunan Pabrik..... | 243 |
| 12.5. Perhitungan Penggajian Karyawan Operator | 244 |
| 12.6. Perhitungan Harga Tanah..... | 245 |
| 12.7. Perhitungan Fixed Capital..... | 246 |
| 12.8. Perhitungan Manufacturing Cost | 248 |
| 12.9. Perhitungan Working Capital..... | 249 |
| 12.10. Perhitungan General Expense | 250 |
| 12.11. Perhitungan Profit | 250 |
| 12.12. Analisis Kelayakan <i>Profitability</i> | 251 |
| 12.13. Sensitivity Analysis..... | 257 |

| | |
|-------------------------|-----|
| BAB 13. KESIMPULAN..... | 260 |
| DAFTAR PUSTAKA | 261 |
| LAMPIRAN..... | 264 |