DAFTAR ISI

Halaman Judul........................................................................................................... i
Halaman Pengajuan................................................................................................. ii
Halaman Pengesahan ............................................................................................. iii
Kata Pengantar ........................................................................................................ iv
Daftar Isi.................................................................................................................... v
Daftar Tabel ............................................................................................................... ix
Daftar Gambar .......................................................................................................... x
Intisari ....................................................................................................................... xi

BAB I. PENDAHULUAN .................................................................................. 1

I.1. Latar Belakang ............................................................................................... 1
I.2. Lokasi Pabrik ................................................................................................. 1
I.2.1. Segi Teknis ............................................................................................... 2
I.2.1.a. Pengadaan Bahan Baku ................................................................. 2
I.2.1.b. Sarana Pendukung Utilitas .............................................................. 2
I.2.1.c. Ketersediaan Tenaga Kerja ............................................................... 3
I.2.1.d. Iklim ..................................................................................................... 3
I.2.1.e. Tanah .................................................................................................. 3
I.2.2. Pemasaran ............................................................................................... 3
I.2.3. Transportasi ............................................................................................. 4
I.2.4. Segi Lingkungan ..................................................................................... 4
I.2.5.     Segi Politik dan Budaya

I.3.     Tinjauan Pustaka

I.3.1.     Tinjauan Berbagai Proses Reaksi

I.3.1.a.     Proses Tekanan Rendah Menggunakan Katalis

I.3.1.b.     Proses Tekanan Tinggi Tanpa Menggunakan Katalis

I.3.2.     Tinjauan Termodinamika

I.3.3     Tinjauan Kinetika

I.3.4     Kapasitas Produksi

BAB II. PROSES PRODUKSI

II.1.     Proses Pendahuluan

II.1.1.     Persiapan

II.1.2.     Kapasitas Produksi

II.1.3.     Spesifikasi Bahan dan Produk

II.1.3.a.     Bahan Baku Utama

II.1.3.b.     Produk

II.1.3.c.     Bahan Katalis

II.1.4.     Penyiapan Bahan baku

II.2.     Proses Pembuatan dan Pemurnian Hasil

II.2.1.     Proses Pembuatan

II.2.2.     Pemurnian Hasil

II.3.     Diagram Alir

II.3.1.     Diagram Alir Kualitatif

II.3.2.     Diagram Alir Kuantitatif
II.4. Tata Letak ................................................................. 22
II.4.1. Tata Letak Pabrik ....................................................... 22
II.4.3. Tata Letak Alat .......................................................... 23
II.5. Spesifikasi Alat .............................................................. 24
II.5.1. Spesifikasi Alat Proses .............................................. 24

BAB III. NERACA MASSA DAN NERACA ENERGI ............... 39

III.1. Neraca Massa .......................................................... 39
III.1.a. Melter ................................................................. 39
III.1.b. Tangki ................................................................. 39
III.1.c. Percabangan Sebelum Reaktor .................................. 40
III.1.d. Reaktor ............................................................... 40
III.1.e. Desublimer .......................................................... 40
III.1.f. Siklon ................................................................. 41
III.1.g. Percabangan ......................................................... 41
III.1.h. Scrubber ............................................................. 41
III.1.i. Percabangan Pendingin ........................................... 42
III.1.j. Total ................................................................. 42

III.2. Neraca Energi ............................................................ 43
III.2.a. Melter ................................................................. 43
III.2.b. Tangki ................................................................. 43
III.2.c. Percabangan ......................................................... 43
III.2.d. Reaktor .............................................................. 44
III.2.e. Desublimer ........................................................ 44
III.2.f. Cooler.................................................................44
III.2.g. Scrubber............................................................45
III.2.h. Furnace.............................................................45

BAB IV. UTILITAS ..........................................................46
IV.1. Air ........................................................................46
IV.2. Steam......................................................................47
IV.3. Listrik .....................................................................47
IV.4. Bahan Bakar...........................................................48
IV.5. Udara Tekan............................................................48
IV.6. Spesifikasi Alat Utilitas ............................................48

BAB V. MANAJEMEN PERUSAHAAN .............................60
V.1. Bentuk Badan Usaha ..................................................60
V.2. Struktur Organisasi.....................................................61
V.3. Jadual Kerja Karyawan ...............................................63
V.4. Jumlah Tenaga Kerja ...................................................64
V.5. Penggajian Karyawan .................................................66
V.6. Evaluasi Ekonomi .......................................................67
V.6.1. Investasi.................................................................68
V.6.1.a. Fixed Capital Investment ........................................68
V.6.1.b. Working Capital ...................................................68
V.6.2. Biaya Manufacturing .................................................68
V.6.3. General Expenses ..................................................69
V.6.4. Penjualan dan Laba ..................................................69
V.6.4.a. Return of Investment ..........................................................................................69
V.6.4.b. Pay out Time ........................................................................................................69
V.6.4.c. Break Even Point ...............................................................................................70
V.6.4.d. Shut Down Point .................................................................................................70
V.6.4.e. Discounted Cash Flow Rate ...............................................................................70

KESIMPULAN .................................................................................................................72

DAFTAR PUSTAKA .........................................................................................................73

LAMPIRAN
DAFTAR TABEL

Tabel 1.1. Pertimbangan Pemilihan Proses.............................................................. 11
Tabel 1.2. Data Kapasitas Pabrik melamin yang sudah beroprasi ...................... 14
Tabel 1.3. Data Impor melamin Tahun 2011-2015 Indonesia................................. 15
Tabel 1.4. Perkiraan impor melamin di Indonesia................................................. 16
Tabel 3.1. Neraca massa pada melter................................................................. 39
Tabel 3.2. Neraca massa pada Tangki................................................................. 39
Tabel 3.3. Neraca massa Percabangan sebelum Reaktor................................. 40
Tabel 3.4. Neraca massa pada Reaktor.............................................................. 40
Tabel 3.5. Neraca massa pada Desublimer......................................................... 40
Tabel 3.6. Neraca massa pada Siklon.................................................................. 41
Tabel 3.7. Neraca massa pada Percabangan....................................................... 41
Tabel 3.8. Neraca massa pada Scrubber............................................................. 41
Tabel 3.9. Neraca massa pada Percabangan pendingin..................................... 42
Tabel 3.10. Neraca massa Total......................................................................... 42
Tabel 3.11. Neraca energi pada Melter................................................................. 43
Tabel 3.12. Neraca energi pada Tangki................................................................. 43
Tabel 3.13. Neraca energi pada Percabangan....................................................... 43
Tabel 3.15. Neraca energi pada Desublimer......................................................... 44
Tabel 3.16. Neraca energi pada Cooler............................................................... 44
Tabel 3.17. Neraca energi pada Scrubber............................................................. 45
Tabel 3.18. Neraca energi pada Furnace.................................45
Tabel 5.1. Jadwal karyawan shift .................................................63
Tabel 5.2. Jumlah Tenaga Kerja ..................................................65
Tabel 5.3. Gaji Karyawan ..........................................................67
Tabel 5.4. Fixed Capital Investment .............................................68
Tabel 5.5. Working Capital .........................................................68
Tabel 5.6. Total Manufacturing Cost .........................................68
Tabel 5.7. General Expenses .....................................................69
DAFTAR GAMBAR

Gambar 1. Grafik Hubungan Kapasitas dengan Tahun ........................................ 16
Gambar 2.1. Diagram Alir Kualitatif ..................................................................... 20
Gambar 2.2. Diagram Alir Kuantitatif ................................................................. 21
Gambar 2.3. Tata Letak Pabrik ........................................................................... 22
Gambar 2.4. Tata Letak Alat ............................................................................... 23
Gambar 5.1. Struktur Organisasi .................................................................62
Gambar 5.2. Grafik Ekonomi .................................................................71