Environmental Impact Report

for SimV2

diciembre 10, 2021

1. WASTE GENERATION BY TYPE

1A. Aqueous Waste

Component	kg/kg MP	kg/Batch	kg/Year	%
Acetic-Acid	0.05	5.13	405	0.19
CDS	0.00	0.21	16	0.01
Chrysanthemol	0.04	4.04	319	0.15
Ethyl Acetate	4.22	442.35	34,946	16.18
Kinase 1	0.00	0.21	16	0.01
Kinase 2	0.00	0.21	16	0.01
NaCl	0.00	0.10	8	0.00
Peptone	0.33	34.61	2,734	1.27
Prenol	0.10	10.00	790	0.37
Water	21.33	2,237.60	176,770	81.83
TOTAL	26.06	2,734.44	216,021	100.00

1B. Organic Waste

Component	kg/kg MP	kg/Batch	kg/Year	%
AAM	0.07	7.79	616	6.30
AHM	0.07	6.93	547	5.60
Chrysanthemol	0.29	30.54	2,413	24.69
Ethyl Acetate	0.38	39.81	3,145	32.19
Ethyl Alcohol	0.17	18.12	1,432	14.65
Pheromone	0.00	0.01	1	0.01
Water	0.20	20.47	1,617	16.55
TOTAL	1.18	123.67	9,770	100.00

1C. Solid Waste

Component	kg/kg MP	kg/Batch	kg/Year	%
Acetic-Acid	0.00	0.20	16	0.19
Biomass	0.00	0.00	0	0.00
CDS	0.00	0.01	1	0.01
Cell Debris	0.15	15.43	1,219	14.95
Kinase 1	0.00	0.01	1	0.01
Kinase 2	0.00	0.01	1	0.01
Peptone	0.01	1.34	106	1.30
Water	0.82	86.25	6,814	83.54
TOTAL	0.98	103.24	8,156	100.00

1D. Emissions

Component	kg/kg MP	kg/Batch	kg/Year	%
Carb. Dioxide	0.25	25.73	2,033	88.23
Nitrogen	0.03	2.63	208	9.03
Oxygen	0.01	0.80	63	2.74
TOTAL	0.28	29.17	2,304	100.00

1E. Total Waste

Component	kg/kg MP	kg/Batch	kg/Year	%
AAM	0.07	7.79	616	0.26
Acetic-Acid	0.05	5.33	421	0.18
AHM	0.07	6.93	547	0.23
Biomass	0.00	0.00	0	0.00
Carb. Dioxide	0.25	25.73	2,033	0.86
CDS	0.00	0.21	17	0.01
Cell Debris	0.15	15.43	1,219	0.52
Chrysanthemol	0.33	34.57	2,731	1.16
Ethyl Acetate	4.60	482.16	38,091	16.12
Ethyl Alcohol	0.17	18.12	1,432	0.61
Kinase 1	0.00	0.21	17	0.01
Kinase 2	0.00	0.21	17	0.01
NaCl	0.00	0.10	8	0.00
Nitrogen	0.03	2.63	208	0.09
Oxygen	0.01	0.80	63	0.03
Peptone	0.34	35.95	2,840	1.20
Pheromone	0.00	0.01	1	0.00
Prenol	0.10	10.00	790	0.33
Water	22.34	2,344.32	185,201	78.39
TOTAL	28.50	2,990.53	236,252	100.00

MP = Flow of Component 'Pheromone' in Stream 'PHERO'

2.1 WASTE GENERATION BY SECTION

Main Section (kg/Year)

Component	Aqueous Waste	Organic Waste	Solid Waste	Gaseous Emissions	Subtotal
AAM	0	616	0	0	616
Acetic-Acid	405	0	16	0	421
AHM	0	547	0	0	547
Biomass	0	0	0	0	0
Carb. Dioxide	0	0	0	2,033	2,033
CDS	16	0	1	0	17
Cell Debris	0	0	1,219	0	1,219
Chrysanthemol	319	2,413	0	0	2,731
Ethyl Acetate	34,946	3,145	0	0	38,091
Ethyl Alcohol	0	1,432	0	0	1,432
Glucose	0	0	0	0	0
H3PO4	0	0	0	0	0
Hydrogen	0	0	0	0	0
Kinase 1	16	0	1	0	17
Kinase 2	16	0	1	0	17
NaCl	8	0	0	0	8
NaOH	0	0	0	0	0
NH3	0	0	0	0	0
Nitrogen	0	0	0	208	208
Oxygen	0	0	0	63	63
Peptone	2,734	0	106	0	2,840
Pheromone	0	1	0	0	1
Prenol	790	0	0	0	790
Proteins	0	0	0	0	0
Salts	0	0	0	0	0
Water	176,770	1,617	6,814	0	185,201
WFI	0	0	0	0	0
TOTAL	216,021	9,770	8,156	2,304	236,252

Entire Process (kg/Year)

Component	Aqueous Waste	Organic Waste	Solid Waste	Gaseous Emissions	Subtotal
AAM	0	616	0	0	616
Acetic-Acid	405	0	16	0	421
AHM	0	547	0	0	547
Biomass	0	0	0	0	0
Carb. Dioxide	0	0	0	2,033	2,033
CDS	16	0	1	0	17
Cell Debris	0	0	1,219	0	1,219
Chrysanthemol	319	2,413	0	0	2,731
Ethyl Acetate	34,946	3,145	0	0	38,091
Ethyl Alcohol	0	1,432	0	0	1,432

Glucose	0	0	0	0	0
H3PO4	0	0	0	0	0
Hydrogen	0	0	0	0	0
Kinase 1	16	0	1	0	17
Kinase 2	16	0	1	0	17
NaCl	8	0	0	0	8
NaOH	0	0	0	0	0
NH3	0	0	0	0	0
Nitrogen	0	0	0	208	208
Oxygen	0	0	0	63	63
Peptone	2,734	0	106	0	2,840
Pheromone	0	1	0	0	1
Prenol	790	0	0	0	790
Proteins	0	0	0	0	0
Salts	0	0	0	0	0
Water	176,770	1,617	6,814	0	185,201
WFI	0	0	0	0	0
TOTAL	216,021	9,770	8,156	2,304	236,252

2.2 WASTE GENERATION BY SECTION AND TYPE (kg/Year)

Section Name	Aqueous Waste	Organic Waste	Solid Waste	Gaseous Emissions
Main Section	216,021	9,770	8,156	2,304
TOTAL	216,021	9,770	8,156	2,304

2.3 WASTE GENERATION DISTRIBUTION BY SECTION AND TYPE (%)

Section Name	Aqueous Waste	Organic Waste	Solid Waste	Gaseous Emissions
Main Section	100	100	100	100
TOTAL	100	100	100	100

3. LUMPED ENVIRONMENTAL STREAM PROPERTIES SECTION

Batch Time = 99,7 h

Stream Name	Biomasa	GAS01	WASTE01	S-106
Source	**INPUT**	**P-1**	**P-2**	**INPUT**
Destination	**P-1**	**OUTPUT**	**OUTPUT**	**P-4**
Stream Properties				
Activity (U/ml)	0.00	0.00	0.00	0.00
Temperature (°C)	25.00	37.00	30.00	25.00
Pressure (bar)	1.01	1.01	0.96	1.01
Concentrations				
TOC (mg C/l)	34,104.82	0.00	779.08	34,104.82
COD (mg O/l)	127,194.22	0.00	217,853.91	127,194.22
ThOD (mg O/l)	127,194.22	0.00	2,087.71	127,194.22
BODu (mg O/l)	117,018.68	0.00	1,766.74	117,018.68
BOD5 (mg O/l)	79,572.70	0.00	21.92	79,572.70
TKN (mg N/l)	7,967.11	0.00	2.19	7,967.11
NH3 (mg N/l)	7,967.11	0.00	2.19	7,967.11
NO3/NO2 (mg N/l)	0.00	0.00	0.00	0.00
TP (mg P/l)	1,397.74	0.00	0.39	1,397.74
TS (mg Slds/l)	69,886.93	0.00	19.25	69,886.93
TSS (mg Slds/l)	69,886.93	0.00	19.25	69,886.93
VSS (mg Slds/l)	62,898.24	0.00	17.33	62,898.24
DVSS (mg Slds/l)	62,898.24	0.00	17.33	62,898.24
TDS (mg Slds/l)	0.00	0.00	0.00	0.00
VDS (mg Slds/l)	0.00	0.00	0.00	0.00
DVDS (mg Slds/l)	0.00	0.00	0.00	0.00
Daily Throughputs				
TOC (kg C/d)	0.00	0.00	0.01	0.00
COD (kg O/d)	0.01	0.00	1.80	0.01
ThOD (kg O/d)	0.01	0.00	0.02	0.01
BODu (kg O/d)	0.01	0.00	0.01	0.01
BOD5 (kg O/d)	0.01	0.00	0.00	0.01
TKN (kg N/d)	0.00	0.00	0.00	0.00
NH3 (kg N/d)	0.00	0.00	0.00	0.00
NO3/NO2 (kg N/d)	0.00	0.00	0.00	0.00
TP (kg P/d)	0.00	0.00	0.00	0.00
TS (kg Slds/d)	0.01	0.00	0.00	0.01
TSS (kg Slds/d)	0.01	0.00	0.00	0.01
VSS (kg Slds/d)	0.01	0.00	0.00	0.01
DVSS (kg Slds/d)	0.01	0.00	0.00	0.01
TDS (kg Slds/d)	0.00	0.00	0.00	0.00
VDS (kg Slds/d)	0.00	0.00	0.00	0.00
DVDS (kg Slds/d)	0.00	0.00	0.00	0.00

Stream Name	GAS02	WASTE02	S-113	GAS03
Source	**P-4**	**P-5**	**INPUT**	**P-7**
Destination	**OUTPUT**	**OUTPUT**	**P-7**	**OUTPUT**
Stream Properties				
Activity (U/ml)	0.00	0.00	0.00	0.00
Temperature (°C)	37.00	30.00	25.00	37.00
Pressure (bar)	1.01	0.96	1.01	1.01
Concentrations				
TOC (mg C/l)	0.00	779.08	34,104.82	0.00
COD (mg O/l)	0.00	217,853.91	127,194.22	0.00
ThOD (mg O/l)	0.00	2,087.71	127,194.22	0.00
BODu (mg O/l)	0.00	1,766.74	117,018.68	0.00
BOD5 (mg O/l)	0.00	21.92	79,572.70	0.00
TKN (mg N/l)	0.00	2.19	7,967.11	0.00
NH3 (mg N/l)	0.00	2.19	7,967.11	0.00
NO3/NO2 (mg N/l)	0.00	0.00	0.00	0.00
TP (mg P/l)	0.00	0.39	1,397.74	0.00
TS (mg Slds/l)	0.00	19.25	69,886.93	0.00
TSS (mg Slds/l)	0.00	19.25	69,886.93	0.00
VSS (mg Slds/l)	0.00	17.33	62,898.24	0.00
DVSS (mg Slds/l)	0.00	17.33	62,898.24	0.00
TDS (mg Slds/l)	0.00	0.00	0.00	0.00
VDS (mg Slds/l)	0.00	0.00	0.00	0.00
DVDS (mg Slds/l)	0.00	0.00	0.00	0.00
Daily Throughputs				
TOC (kg C/d)	0.00	0.01	0.00	0.00
COD (kg O/d)	0.00	1.80	0.01	0.00
ThOD (kg O/d)	0.00	0.02	0.01	0.00
BODu (kg O/d)	0.00	0.01	0.01	0.00
BOD5 (kg O/d)	0.00	0.00	0.01	0.00
TKN (kg N/d)	0.00	0.00	0.00	0.00
NH3 (kg N/d)	0.00	0.00	0.00	0.00
NO3/NO2 (kg N/d)	0.00	0.00	0.00	0.00
TP (kg P/d)	0.00	0.00	0.00	0.00
TS (kg Slds/d)	0.00	0.00	0.01	0.00
TSS (kg Slds/d)	0.00	0.00	0.01	0.00
VSS (kg Slds/d)	0.00	0.00	0.01	0.00
DVSS (kg Slds/d)	0.00	0.00	0.01	0.00
TDS (kg Slds/d)	0.00	0.00	0.00	0.00
VDS (kg Slds/d)	0.00	0.00	0.00	0.00
DVDS (kg Slds/d)	0.00	0.00	0.00	0.00

Stream Name	WASTE03	Prenol	Buffer	REF
Source	P-8	INPUT	INPUT	P-12
Destination	OUTPUT	P-11	P-11	OUTPUT
Stream Properties				
Activity (U/ml)	0.00	0.00	0.00	0.00
Temperature (°C)	30.00	25.00	25.00	25.00
Pressure (bar)	0.96	1.01	1.01	2.00
Concentrations				
TOC (mg C/l)	779.08	0.00	0.00	889.15
COD (mg O/l)	217,853.91	2,094,930.33	0.00	39,559.25
ThOD (mg O/l)	2,087.71	0.00	0.00	2,371.29
BODu (mg O/l)	1,766.74	0.00	0.00	2,003.74
BOD5 (mg O/l)	21.92	0.00	0.00	0.00
TKN (mg N/l)	2.19	0.00	0.00	0.00
NH3 (mg N/l)	2.19	0.00	0.00	0.00
NO3/NO2 (mg N/l)	0.00	0.00	0.00	0.00
TP (mg P/l)	0.39	0.00	0.00	0.00
TS (mg Slds/l)	19.25	0.00	9,995.62	43.38
TSS (mg Slds/l)	19.25	0.00	0.00	0.00
VSS (mg Slds/l)	17.33	0.00	0.00	0.00
DVSS (mg Slds/l)	17.33	0.00	0.00	0.00
TDS (mg Slds/l)	0.00	0.00	9,995.62	43.38
VDS (mg Slds/l)	0.00	0.00	0.00	0.00
DVDS (mg Slds/l)	0.00	0.00	0.00	0.00
Daily Throughputs				
TOC (kg C/d)	0.01	0.00	0.00	0.49
COD (kg O/d)	1.80	62.72	0.00	21.95
ThOD (kg O/d)	0.02	0.00	0.00	1.32
BODu (kg O/d)	0.01	0.00	0.00	1.11
BOD5 (kg O/d)	0.00	0.00	0.00	0.00
TKN (kg N/d)	0.00	0.00	0.00	0.00
NH3 (kg N/d)	0.00	0.00	0.00	0.00
NO3/NO2 (kg N/d)	0.00	0.00	0.00	0.00
TP (kg P/d)	0.00	0.00	0.00	0.00
TS (kg Slds/d)	0.00	0.00	0.02	0.02
TSS (kg Slds/d)	0.00	0.00	0.00	0.00
VSS (kg Slds/d)	0.00	0.00	0.00	0.00
DVSS (kg Slds/d)	0.00	0.00	0.00	0.00
TDS (kg Slds/d)	0.00	0.00	0.02	0.02
VDS (kg Slds/d)	0.00	0.00	0.00	0.00
DVDS (kg Slds/d)	0.00	0.00	0.00	0.00

Stream Name	S-122	ET-AC	AHM	S-123
Source	INPUT	P-13	INPUT	INPUT
Destination	P-12	OUTPUT	P-14	P-14
Stream Properties				
Activity (U/ml)	0.00	0.00	0.00	0.00
Temperature (°C)	25.00	77.22	25.00	25.00
Pressure (bar)	1.01	1.01	1.01	1.01
Concentrations				
TOC (mg C/l)	487,035.94	453,039.14	0.00	487,035.94
COD (mg O/l)	1,622,857.37	1,510,634.91	0.00	1,622,857.37
ThOD (mg O/l)	1,622,857.37	1,509,576.27	0.00	1,622,857.37
BODu (mg O/l)	1,314,514.47	1,222,756.78	0.00	1,314,514.47
BOD5 (mg O/l)	0.00	0.00	0.00	0.00
TKN (mg N/l)	0.00	0.00	0.00	0.00
NH3 (mg N/l)	0.00	0.00	0.00	0.00
NO3/NO2 (mg N/l)	0.00	0.00	0.00	0.00
TP (mg P/l)	0.00	0.00	0.00	0.00
TS (mg Slds/l)	0.00	0.00	0.00	0.00
TSS (mg Slds/l)	0.00	0.00	0.00	0.00
VSS (mg Slds/l)	0.00	0.00	0.00	0.00
DVSS (mg Slds/l)	0.00	0.00	0.00	0.00
TDS (mg Slds/l)	0.00	0.00	0.00	0.00
VDS (mg Slds/l)	0.00	0.00	0.00	0.00
DVDS (mg Slds/l)	0.00	0.00	0.00	0.00
Daily Throughputs				
TOC (kg C/d)	58.65	58.06	0.00	9.19
COD (kg O/d)	195.43	193.61	0.00	30.62
ThOD (kg O/d)	195.43	193.47	0.00	30.62
BODu (kg O/d)	158.30	156.71	0.00	24.80
BOD5 (kg O/d)	0.00	0.00	0.00	0.00
TKN (kg N/d)	0.00	0.00	0.00	0.00
NH3 (kg N/d)	0.00	0.00	0.00	0.00
NO3/NO2 (kg N/d)	0.00	0.00	0.00	0.00
TP (kg P/d)	0.00	0.00	0.00	0.00
TS (kg Slds/d)	0.00	0.00	0.00	0.00
TSS (kg Slds/d)	0.00	0.00	0.00	0.00
VSS (kg Slds/d)	0.00	0.00	0.00	0.00
DVSS (kg Slds/d)	0.00	0.00	0.00	0.00
TDS (kg Slds/d)	0.00	0.00	0.00	0.00
VDS (kg Slds/d)	0.00	0.00	0.00	0.00
DVDS (kg Slds/d)	0.00	0.00	0.00	0.00

Stream Name	Media	DIST	PHERO
Source	**INPUT**	**P-17**	**P-17**
Destination	**P-16**	**OUTPUT**	**OUTPUT**
Stream Properties			
Activity (U/ml)	0.00	0.00	0.00
Temperature (°C)	25.00	101.18	393.45
Pressure (bar)	1.01	1.01	1.01
Concentrations			
TOC (mg C/l)	7,988.31	219,512.13	16.91
COD (mg O/l)	44,654.63	1,034,914.15	1,961,068.64
ThOD (mg O/l)	21,288.83	759,969.15	56.36
BODu (mg O/l)	15,583.43	640,347.47	45.65
BOD5 (mg O/l)	14,025.08	0.00	0.00
TKN (mg N/l)	0.00	0.00	0.00
NH3 (mg N/l)	0.00	0.00	0.00
NO3/NO2 (mg N/l)	0.00	0.00	0.00
TP (mg P/l)	0.00	0.00	0.00
TS (mg Slds/l)	19,970.76	0.00	0.00
TSS (mg Slds/l)	0.00	0.00	0.00
VSS (mg Slds/l)	0.00	0.00	0.00
DVSS (mg Slds/l)	0.00	0.00	0.00
TDS (mg Slds/l)	19,970.76	0.00	0.00
VDS (mg Slds/l)	19,970.76	0.00	0.00
DVDS (mg Slds/l)	19,970.76	0.00	0.00
Daily Throughputs			
TOC (kg C/d)	4.62	7.66	0.00
COD (kg O/d)	25.81	36.10	60.59
ThOD (kg O/d)	12.31	26.51	0.00
BODu (kg O/d)	9.01	22.33	0.00
BOD5 (kg O/d)	8.11	0.00	0.00
TKN (kg N/d)	0.00	0.00	0.00
NH3 (kg N/d)	0.00	0.00	0.00
NO3/NO2 (kg N/d)	0.00	0.00	0.00
TP (kg P/d)	0.00	0.00	0.00
TS (kg Slds/d)	11.54	0.00	0.00
TSS (kg Slds/d)	0.00	0.00	0.00
VSS (kg Slds/d)	0.00	0.00	0.00
DVSS (kg Slds/d)	0.00	0.00	0.00
TDS (kg Slds/d)	11.54	0.00	0.00
VDS (kg Slds/d)	11.54	0.00	0.00
DVDS (kg Slds/d)	11.54	0.00	0.00

4. OVERALL BALANCE SECTION

ENVIRONMENTAL LOAD (per Batch)

hs per Batch = 99,7

Environmental Property	IN (kg/batch)	OUT (kg/batch)	(IN-OUT)/IN (% Reduction)
TOC	300.89	275.00	8.60
COD	1,306.30	1,318.94	- 0.97
ThOD	989.83	919.06	7.15
BODu	797.79	748.22	6.21
BOD5	33.77	0.00	99.99
TKN	0.01	0.00	98.03
NH3	0.01	0.00	98.03
NO3/NO2	0.00	0.00	0.00
TP	0.00	0.00	98.03
TS	48.13	0.10	99.79
TSS	0.10	0.00	98.03
VSS	0.09	0.00	98.03
DVSS	0.09	0.00	98.03
TDS	48.03	0.10	99.79
VDS	47.93	0.00	100.00
DVDS	47.93	0.00	100.00
CaCO3	0.00	0.00	0.00

ENVIRONMENTAL LOAD (per Year)

hs per Year = 7872,4

Environmental Property	IN (kg/year)	OUT (kg/year)	(IN-OUT)/IN (% Reduction)
TOC	23,770	21,725	9
COD	103,198	104,196	- 1
ThOD	78,196	72,606	7
BODu	63,026	59,110	6
BOD5	2,668	0	100
TKN	1	0	98
NH3	1	0	98
NO3/NO2	0	0	0
TP	0	0	98
TS	3,802	8	100
TSS	8	0	98
VSS	7	0	98
DVSS	7	0	98
TDS	3,794	8	100
VDS	3,786	0	100
DVDS	3,786	0	100
CaCO3	0	0	0

5. ENVIRONMENTAL PROPERTIES BY WASTE TYPE

ENVIRONMENTAL LOAD (per Batch)

hs per Batch = 99,7

Environmental Property	Solid Waste (kg/batch)	Aqueous Waste (kg/batch)	Organic Waste (kg/batch)	Emission (kg/batch)
TOC	0.08	243.13	31.79	0.00
COD	22.45	895.03	149.87	0.00
ThOD	0.22	808.78	110.06	0.00
BODu	0.18	655.30	92.73	0.00
BOD5	0.00	0.00	0.00	0.00
TKN	0.00	0.00	0.00	0.00
NH3	0.00	0.00	0.00	0.00
NO3_NO2	0.00	0.00	0.00	0.00
TP	0.00	0.00	0.00	0.00
TS	0.00	0.10	0.00	0.00
TSS	0.00	0.00	0.00	0.00
VSS	0.00	0.00	0.00	0.00
DVSS	0.00	0.00	0.00	0.00
TDS	0.00	0.10	0.00	0.00
VDS	0.00	0.00	0.00	0.00
DVDS	0.00	0.00	0.00	0.00
CaCO3	0.00	0.00	0.00	0.00

ENVIRONMENTAL LOAD (per Year)

hs per Year = 7872,4

Environmental Property	Solid Waste (kg/year)	Aqueous Waste (kg/year)	Organic Waste (kg/year)	Emission (kg/year)
TOC	6	19,207	2,511	0
COD	1,774	70,707	11,840	0
ThOD	17	63,893	8,694	0
BODu	14	51,769	7,326	0
BOD5	0	0	0	0
TKN	0	0	0	0
NH3	0	0	0	0
NO3_NO2	0	0	0	0
TP	0	0	0	0
TS	0	8	0	0
TSS	0	0	0	0
VSS	0	0	0	0
DVSS	0	0	0	0
TDS	0	8	0	0
VDS	0	0	0	0
DVDS	0	0	0	0
CaCO3	0	0	0	0

6. COMPONENT FATE SECTION

Component Allocation (Per Batch)

Component Name	Total In (kg/batch)	Out As Solid Waste (kg/batch)	Out As Aqueous Waste (kg/batch)	Out As Organic Waste (kg/batch)	Out As Emission (kg/batch)
AAM	0.00	0.00	0.00	7.79	0.00
Acetic-Acid	0.00	0.20	5.13	0.00	0.00
AHM	70.00	0.00	0.00	6.93	0.00
Biomass	0.10	0.00	0.00	0.00	0.00
Carb. Dioxide	0.00	0.00	0.00	0.00	25.73
CDS	0.00	0.01	0.21	0.00	0.00
Cell Debris	0.00	15.43	0.00	0.00	0.00
Chrysanthemol	0.00	0.00	4.04	30.54	0.00
Ethyl Acetate	516.82	0.00	442.35	39.81	0.00
Ethyl Alcohol	0.00	0.00	0.00	18.12	0.00
Glucose	47.93	0.00	0.00	0.00	0.00
H3PO4	0.00	0.00	0.00	0.00	0.00
Hydrogen	0.00	0.00	0.00	0.00	0.00
Kinase 1	0.00	0.01	0.21	0.00	0.00
Kinase 2	0.00	0.01	0.21	0.00	0.00
NaCl	0.10	0.00	0.10	0.00	0.00
NaOH	0.00	0.00	0.00	0.00	0.00
NH3	0.00	0.00	0.00	0.00	0.00
Nitrogen	5.40	0.00	0.00	0.00	2.63
Oxygen	1.64	0.00	0.00	0.00	0.80
Peptone	35.95	1.34	34.61	0.00	0.00
Pheromone	0.00	0.00	0.00	0.01	0.00
Prenol	100.00	0.00	10.00	0.00	0.00
Proteins	0.00	0.00	0.00	0.00	0.00
Salts	0.00	0.00	0.00	0.00	0.00
Water	2,323.85	86.25	2,237.60	20.47	0.00
WFI	0.00	0.00	0.00	0.00	0.00
TOTAL	3,101.78	103.24	2,734.44	123.67	29.17

Component Allocation (Per Year)

Component Name	Total In (kg/yr)	Out As Solid Waste (kg/yr)	Out As Aqueous Waste (kg/yr)	Out As Organic Waste (kg/yr)	Out As Emission (kg/yr)
AAM	0	0	0	616	0
Acetic-Acid	0	16	405	0	0
AHM	5,530	0	0	547	0
Biomass	8	0	0	0	0
Carb. Dioxide	0	0	0	0	2,033

CDS	0	1	16	0	0
Cell Debris	0	1,219	0	0	0
Chrysanthemol	0	0	319	2,413	0
Ethyl Acetate	40,829	0	34,946	3,145	0
Ethyl Alcohol	0	0	0	1,432	0
Glucose	3,786	0	0	0	0
H3PO4	0	0	0	0	0
Hydrogen	0	0	0	0	0
Kinase 1	0	1	16	0	0
Kinase 2	0	1	16	0	0
NaCl	8	0	8	0	0
NaOH	0	0	0	0	0
NH3	0	0	0	0	0
Nitrogen	426	0	0	0	208
Oxygen	129	0	0	0	63
Peptone	2,840	106	2,734	0	0
Pheromone	0	0	0	1	0
Prenol	7,900	0	790	0	0
Proteins	0	0	0	0	0
Salts	0	0	0	0	0
Water	183,584	6,814	176,770	1,617	0
WFI	0	0	0	0	0
TOTAL	245,041	8,156	216,021	9,770	2,304

7. SARA 313 CHEMICALS SECTION

ENVIRONMENTAL LOAD (per Batch)

Component Name	In (kg/batch)	Out As Emission (kg/batch)	Out As Aqueous Waste (kg/batch)	Out As Organic Waste (kg/batch)	Out As Solid Waste (kg/batch)
H3PO4	0.00	0.00	0.00	0.00	0.00
NH3	0.00	0.00	0.00	0.00	0.00
TOTAL	0.00	0.00	0.00	0.00	0.00

ENVIRONMENTAL LOAD (per Year)

Component Name	In (kg/year)	Out As Emission (kg/year)	Out As Aqueous Waste (kg/year)	Out As Organic Waste (kg/year)	Out As Solid Waste (kg/year)
H3PO4	0	0	0	0	0
NH3	0	0	0	0	0
TOTAL	0	0	0	0	0

8. 33/50 CHEMICALS SECTION

ENVIRONMENTAL LOAD (per Batch)

Component Name	In (kg/batch)	Out As Emission (kg/batch)	Out As Aqueous Waste (kg/batch)	Out As Organic Waste (kg/batch)	Out As Solid Waste (kg/batch)
Water	2,323.85	0.00	2,237.60	20.47	86.25
WFI	0.00	0.00	0.00	0.00	0.00
TOTAL	2,323.85	0.00	2,237.60	20.47	86.25

ENVIRONMENTAL LOAD (per Year)

Component Name	In (kg/year)	Out As Emission (kg/year)	Out As Aqueous Waste (kg/year)	Out As Organic Waste (kg/year)	Out As Solid Waste (kg/year)
Water	183,584	0	176,770	1,617	6,814
WFI	0	0	0	0	0
TOTAL	183,584	0	176,770	1,617	6,814

9. SOLID WASTE SECTION

By Output Location

At Output Stream Locations

WASTE01	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Acetic-Acid	0.19	0.07	5
	Biomass	0.00	0.00	0
	Water	83.54	28.75	2,272
	TOTAL	83.73	28.82	2,277

WASTE02	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Acetic-Acid	0.19	0.07	5
	Biomass	0.00	0.00	0
	Water	83.54	28.75	2,271
	TOTAL	83.73	28.81	2,276

WASTE03	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Acetic-Acid	0.19	0.07	5
	Biomass	0.00	0.00	0
	Water	83.54	28.75	2,271
	TOTAL	83.73	28.81	2,276

By Component

Acetic-Acid	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	WASTE01	33.34	0.07	5
	WASTE02	33.33	0.07	5
	WASTE03	33.33	0.07	5
	TOTAL	100.00	0.20	16

Biomass	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	WASTE01	33.34	0.00	0
	WASTE02	33.33	0.00	0
	WASTE03	33.33	0.00	0
	TOTAL	100.00	0.00	0

Water	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	WASTE01	33.34	28.75	2,272
	WASTE02	33.33	28.75	2,271
	WASTE03	33.33	28.75	2,271
	TOTAL	100.00	86.25	6,814

10. AQUEOUS WASTE SECTION

By Output Location

At Output Stream Locations

REF	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Acetic-Acid	0.22	5.13	405
	NaCl	0.00	0.10	8
	Water	97.64	2,237.60	176,770
	TOTAL	97.87	2,242.83	177,183

ET-AC	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Ethyl Acetate	99.90	442.35	34,946
	TOTAL	99.90	442.35	34,946

By Component

Acetic-Acid	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	REF	100.00	5.13	405
	ET-AC	0.00	0.00	0
	TOTAL	100.00	5.13	405

Ethyl Acetate	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	REF	0.00	0.00	0
	ET-AC	100.00	442.35	34,946
	TOTAL	100.00	442.35	34,946

NaCl	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	REF	100.00	0.10	8
	ET-AC	0.00	0.00	0
	TOTAL	100.00	0.10	8

Water	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	REF	100.00	2,237.60	176,770
	ET-AC	0.00	0.00	0
	TOTAL	100.00	2,237.60	176,770

11. ORGANIC WASTE SECTION

By Output Location

At Output Stream Locations

DIST	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Ethyl Acetate	32.19	39.81	3,145
	Ethyl Alcohol	14.65	18.12	1,432
	Water	16.55	20.47	1,617
	TOTAL	63.39	78.40	6,194

By Component

Ethyl Acetate	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	DIST	100.00	39.81	3,145
	TOTAL	100.00	39.81	3,145

Ethyl Alcohol	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	DIST	100.00	18.12	1,432
	TOTAL	100.00	18.12	1,432

Water	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	DIST	100.00	20.47	1,617
	TOTAL	100.00	20.47	1,617

12. EMISSIONS SECTION

By Output Location

At Output Stream Locations

GAS01	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Carb. Dioxide	88.23	8.58	678
	TOTAL	88.23	8.58	678

GAS02	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Carb. Dioxide	88.23	8.58	678
	TOTAL	88.23	8.58	678

GAS03	Component	Composition (Mass %)	Component Flow (kg/batch)	Component Flow (kg/year)
	Carb. Dioxide	88.23	8.58	678
	TOTAL	88.23	8.58	678

By Component

Carb. Dioxide	Output Location	Mass %	Component Flow (kg/batch)	Component Flow (kg/year)
	GAS01	33.34	8.58	678
	GAS02	33.33	8.58	678
	GAS03	33.33	8.58	678
	TOTAL	100.00	25.73	2,033

13. HAZARDOUS STREAMS SECTION

Stream by Stream

Component by Component

14. POLLUTION INDICES SECTION

Waste-to-MP Indices	
Total Waste / MP	28.50
Solid Waste / MP	0.98
Aqueous Waste / MP	26.06
Organic Waste / MP	1.18
Emissions / MP	0.28

MP = Flow of Component 'Pheromone' in Stream 'PHERO'

Waste-to-Raw-Materials Indices	
Total Waste / Raw Materials	0.97
Solid Waste / Raw Materials	0.03
Aqueous Waste / Raw Materials	0.88
Organic Waste / Raw Materials	0.04
Emissions / Raw Materials	0.01