

ANEXO 1: TABLAS DE CORRIENTES

Variable	Unidades	1	2
From			
To		E-101	E-102
Stream Class		CONVEN	CONVEN
Phase		Vapor Phase	Vapor Phase
Temperature	C	197	119
Pressure	kPa	180	180
Mass Density	kg/cum	1,9	1,0
Enthalpy Flow	kW	1158,4	-61333,2
Average MW		42,1	18,0
Mole Flows	kmol/hr	124,3	924,9
Mass Flows	kg/hr	5230,62	16661,97
N2	kg/hr	0,00	0,00
ARGON	kg/hr	0,00	0,00
O2	kg/hr	0,00	0,00
CO2	kg/hr	0,00	0,00
PROPYLEN	kg/hr	5230,62	0,00
FORMA-01	kg/hr	0,00	0,00
ACETALD	kg/hr	0,00	0,00
ACROL	kg/hr	0,00	0,00
H2O	kg/hr	0,00	16661,97
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	0	0
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,000	0,000
ARGON		0,000	0,000
O2		0,000	0,000
CO2		0,000	0,000
PROPYLEN		1,000	0,000
FORMA-01		0,000	0,000
ACETALD		0,000	0,000
ACROL		0,000	0,000
H2O		0,000	1,000
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	2682	16566

TABLA DE CORRIENTES

Variable	Unidades	3	4
From			E-101
To		C-101	MIX1
Stream Class		CONVEN	CONVEN
Phase		Vapor Phase	Vapor Phase
Temperature	C	25	310
Pressure	kPa	101	180
Mass Density	kg/cum	1,2	1,6
Enthalpy Flow	kW	-337,1	1540,7
Average MW		28,9	42,1
Mole Flows	kmol/hr	1109,3	124,3
Mass Flows	kg/hr	32084,98	5230,62
N2	kg/hr	24127,90	0,00
ARGON	kg/hr	455,61	0,00
O2	kg/hr	7411,63	0,00
CO2	kg/hr	0,00	0,00
PROPYLEN	kg/hr	0,00	5230,62
FORMA-01	kg/hr	0,00	0,00
ACETALD	kg/hr	0,00	0,00
ACROL	kg/hr	0,00	0,00
H2O	kg/hr	89,84	0,00
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	0	0
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,752	0,000
ARGON		0,014	0,000
O2		0,231	0,000
CO2		0,000	0,000
PROPYLEN		0,000	1,000
FORMA-01		0,000	0,000
ACETALD		0,000	0,000
ACROL		0,000	0,000
H2O		0,003	0,000
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	27213	3338

TABLA DE CORRIENTES

Variable	Unidades	5	6
From		E-102	C-101
To		MIX1	E-103
Stream Class		CONVEN	CONVEN
Phase		Vapor Phase	Vapor Phase
Temperature	C	310	99,12729301
Pressure	kPa	180	180
Mass Density	kg/cum	0,7	1,7
Enthalpy Flow	kW	-59598,3	329,1
Average MW		18,0	28,9
Mole Flows	kmol/hr	924,9	1109,3
Mass Flows	kg/hr	16661,97	32084,98
N2	kg/hr	0,00	24127,90
ARGON	kg/hr	0,00	455,61
O2	kg/hr	0,00	7411,63
CO2	kg/hr	0,00	0,00
PROPYLEN	kg/hr	0,00	0,00
FORMA-01	kg/hr	0,00	0,00
ACETALD	kg/hr	0,00	0,00
ACROL	kg/hr	0,00	0,00
H2O	kg/hr	16661,97	89,84
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	0	0
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,000	0,752
ARGON		0,000	0,014
O2		0,000	0,231
CO2		0,000	0,000
PROPYLEN		0,000	0,000
FORMA-01		0,000	0,000
ACETALD		0,000	0,000
ACROL		0,000	0,000
H2O		1,000	0,003
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	24819	19074

TABLA DE CORRIENTES

Variable	Unidades	7	8
From		E-103	MIX1
To		MIX1	R-IMAG
Stream Class		CONVEN	CONVEN
Phase		Vapor Phase	Vapor Phase
Temperature	C	310	309,8320474
Pressure	kPa	180	180
Mass Density	kg/cum	1,1	0,9
Enthalpy Flow	kW	2263,5	-55794,1
Average MW		28,9	25,0
Mole Flows	kmol/hr	1109,3	2158,5
Mass Flows	kg/hr	32084,98	53977,57
N2	kg/hr	24127,90	24127,90
ARGON	kg/hr	455,61	455,61
O2	kg/hr	7411,63	7411,63
CO2	kg/hr	0,00	0,00
PROPYLEN	kg/hr	0,00	5230,62
FORMA-01	kg/hr	0,00	0,00
ACETALD	kg/hr	0,00	0,00
ACROL	kg/hr	0,00	0,00
H2O	kg/hr	89,84	16751,81
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	0	0
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,752	0,447
ARGON		0,014	0,008
O2		0,231	0,137
CO2		0,000	0,000
PROPYLEN		0,000	0,097
FORMA-01		0,000	0,000
ACETALD		0,000	0,000
ACROL		0,000	0,000
H2O		0,003	0,310
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	29894	58064

TABLA DE CORRIENTES

Variable	Unidades	9	10
From		R-IMAG	R-101
To		R-101	E-104
Stream Class		CONVEN	CONVEN
Phase		Vapor Phase	Vapor Phase
Temperature	C	310	310
Pressure	kPa	180	180
Mass Density	kg/cum	0,9	0,9
Enthalpy Flow	kW	-56432,6	-74947,3
Average MW		25,0	25,0
Mole Flows	kmol/hr	2156,9	2159,3
Mass Flows	kg/hr	53977,57	53977,57
N2	kg/hr	24127,90	24127,90
ARGON	kg/hr	455,61	455,61
O2	kg/hr	7202,81	1658,73
CO2	kg/hr	0,00	2218,92
PROPYLEN	kg/hr	5021,40	460,48
FORMA-01	kg/hr	149,29	149,29
ACETALD	kg/hr	82,14	82,14
ACROL	kg/hr	0,00	4455,71
H2O	kg/hr	16751,81	19309,94
AC-ACET	kg/hr	186,61	186,61
AC-ACRY	kg/hr	0	872,2360399
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,447	0,447
ARGON		0,008	0,008
O2		0,133	0,031
CO2		0,000	0,041
PROPYLEN		0,093	0,009
FORMA-01		0,003	0,003
ACETALD		0,002	0,002
ACROL		0,000	0,083
H2O		0,310	0,358
AC-ACET		0,003	0,003
AC-ACRY		0,000	0,016
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	58038	58078

TABLA DE CORRIENTES

Variable	Unidades	11	12
From		E-104	C-102
To		C-102	T-201
Stream Class		CONVEN	CONVEN
Phase		Vapor Phase	
Temperature	C	94,59979989	105
Pressure	kPa	167,3750362	180
Mass Density	kg/cum	1,4	1,4
Enthalpy Flow	kW	-79869,5	-79395,9
Average MW		25,0	25,0
Mole Flows	kmol/hr	2159,3	2159,3
Mass Flows	kg/hr	53977,57	53977,57
N2	kg/hr	24127,90	24127,90
ARGON	kg/hr	455,61	455,61
O2	kg/hr	1658,73	1658,73
CO2	kg/hr	2218,92	2218,92
PROPYLEN	kg/hr	460,48	460,48
FORMA-01	kg/hr	149,29	149,29
ACETALD	kg/hr	82,14	82,14
ACROL	kg/hr	4455,71	4455,71
H2O	kg/hr	19309,94	19309,94
AC-ACET	kg/hr	186,61	186,61
AC-ACRY	kg/hr	872,2360399	872,2360399
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,447	0,447
ARGON		0,008	0,008
O2		0,031	0,031
CO2		0,041	0,041
PROPYLEN		0,009	0,009
FORMA-01		0,003	0,003
ACETALD		0,002	0,002
ACROL		0,083	0,083
H2O		0,358	0,358
AC-ACET		0,003	0,003
AC-ACRY		0,016	0,016
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	38806	37502

TABLA DE CORRIENTES

Variable	Unidades	13	14
From			T-201
To		T-201	
Stream Class		CONVEN	CONVEN
Phase		Liquid Phase	Vapor Phase
Temperature	C	40	40,01777578
Pressure	kPa	180	180
Mass Density	kg/cum	979,4	2,0
Enthalpy Flow	kW	-1683588,0	-8154,9
Average MW		18,0	28,9
Mole Flows	kmol/hr	21290,1	1028,1
Mass Flows	kg/hr	383547,83	29670,66
N2	kg/hr	0,00	24121,40
ARGON	kg/hr	0,00	455,38
O2	kg/hr	0,00	1657,95
CO2	kg/hr	0,00	2201,34
PROPYLEN	kg/hr	0,00	459,89
FORMA-01	kg/hr	0,00	0,13
ACETALD	kg/hr	0,00	0,12
ACROL	kg/hr	0,00	4,46
H2O	kg/hr	383547,83	770,01
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	0	1,35812E-18
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,000	0,813
ARGON		0,000	0,015
O2		0,000	0,056
CO2		0,000	0,074
PROPYLEN		0,000	0,015
FORMA-01		0,000	0,000
ACETALD		0,000	0,000
ACROL		0,000	0,000
H2O		1,000	0,026
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	392	14852

TABLA DE CORRIENTES

Variable	Unidades	15	16
From		T-201	E-205
To		E-205	E-104
Stream Class		CONVEN	CONVEN
Phase		Liquid Phase	
Temperature	C	70,45223346	78,1551081
Pressure	kPa	180	151,4410634
Mass Density	kg/cum	946,2	931,6
Enthalpy Flow	kW	-1754829,1	-1751087,1
Average MW		18,2	18,2
Mole Flows	kmol/hr	22421,4	22421,4
Mass Flows	kg/hr	407854,74	407854,74
N2	kg/hr	6,51	6,51
ARGON	kg/hr	0,23	0,23
O2	kg/hr	0,78	0,78
CO2	kg/hr	17,59	17,59
PROPYLEN	kg/hr	0,59	0,59
FORMA-01	kg/hr	149,17	149,17
ACETALD	kg/hr	82,02	82,02
ACROL	kg/hr	4451,25	4451,25
H2O	kg/hr	402087,76	402087,76
AC-ACET	kg/hr	186,61	186,61
AC-ACRY	kg/hr	872,2360399	872,2360399
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,000	0,000
ARGON		0,000	0,000
O2		0,000	0,000
CO2		0,000	0,000
PROPYLEN		0,000	0,000
FORMA-01		0,000	0,000
ACETALD		0,000	0,000
ACROL		0,011	0,011
H2O		0,986	0,986
AC-ACET		0,000	0,000
AC-ACRY		0,002	0,002
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	431	438

TABLA DE CORRIENTES

Variable	Unidades	17	18
From		E-104	E-208
To		E-208	T-202
Stream Class		CONVEN	CONVEN
Phase			
Temperature	C	88,17176902	100
Pressure	kPa	142,0081575	180
Mass Density	kg/cum	906,8	890,7
Enthalpy Flow	kW	-1746164,9	-1740267,8
Average MW		18,2	18,2
Mole Flows	kmol/hr	22421,4	22421,4
Mass Flows	kg/hr	407854,74	407854,74
N2	kg/hr	6,51	6,51
ARGON	kg/hr	0,23	0,23
O2	kg/hr	0,78	0,78
CO2	kg/hr	17,59	17,59
PROPYLEN	kg/hr	0,59	0,59
FORMA-01	kg/hr	149,17	149,17
ACETALD	kg/hr	82,02	82,02
ACROL	kg/hr	4451,25	4451,25
H2O	kg/hr	402087,76	402087,76
AC-ACET	kg/hr	186,61	186,61
AC-ACRY	kg/hr	872,2360399	872,2360399
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,000	0,000
ARGON		0,000	0,000
O2		0,000	0,000
CO2		0,000	0,000
PROPYLEN		0,000	0,000
FORMA-01		0,000	0,000
ACETALD		0,000	0,000
ACROL		0,011	0,011
H2O		0,986	0,986
AC-ACET		0,000	0,000
AC-ACRY		0,002	0,002
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	450	458

TABLA DE CORRIENTES

Variable	Unidades	19	20
From		T-202	T-202
To		E-207	
Stream Class		CONVEN	CONVEN
Phase		Vapor Phase	Liquid Phase
Temperature	C	50,74547163	99,84079132
Pressure	kPa	101	101
Mass Density	kg/cum	1,9	918,4
Enthalpy Flow	kW	-4588,9	-1737749,6
Average MW		50,9	18,1
Mole Flows	kmol/hr	164,1	22333,8
Mass Flows	kg/hr	8344,87	403170,30
N2	kg/hr	6,51	0,00
ARGON	kg/hr	0,23	0,00
O2	kg/hr	0,78	0,00
CO2	kg/hr	17,59	0,00
PROPYLEN	kg/hr	0,59	0,00
FORMA-01	kg/hr	146,30	4,22
ACETALD	kg/hr	131,07	4,14
ACROL	kg/hr	7719,89	46,60
H2O	kg/hr	321,90	402056,50
AC-ACET	kg/hr	0,00	186,61
AC-ACRY	kg/hr	0,007215539	872,2288244
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,001	0,000
ARGON		0,000	0,000
O2		0,000	0,000
CO2		0,002	0,000
PROPYLEN		0,000	0,000
FORMA-01		0,018	0,000
ACETALD		0,016	0,000
ACROL		0,925	0,000
H2O		0,039	0,997
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,002
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	4281	439

TABLA DE CORRIENTES

Variable	Unidades	21	22
From		E-207	T-203
To		T-203	
Stream Class		CONVEN	CONVEN
Phase		Vapor Phase	
Temperature	C	20	0,617656283
Pressure	kPa	101	101
Mass Density	kg/cum	313,2	1,5
Enthalpy Flow	kW	-6072,9	-265,2
Average MW		50,9	34,2
Mole Flows	kmol/hr	164,1	7,1
Mass Flows	kg/hr	8344,87	243,88
N2	kg/hr	6,51	6,51
ARGON	kg/hr	0,23	0,23
O2	kg/hr	0,78	0,78
CO2	kg/hr	17,59	17,59
PROPYLEN	kg/hr	0,59	0,59
FORMA-01	kg/hr	146,30	144,91
ACETALD	kg/hr	131,07	65,53
ACROL	kg/hr	7719,89	7,71
H2O	kg/hr	321,90	0,03
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	0,007215539	5,28393E-17
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,001	0,027
ARGON		0,000	0,001
O2		0,000	0,003
CO2		0,002	0,072
PROPYLEN		0,000	0,002
FORMA-01		0,018	0,594
ACETALD		0,016	0,269
ACROL		0,925	0,032
H2O		0,039	0,000
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	26,64	158

TABLA DE CORRIENTES

Variable	Unidades	23	24
From		T-203	P-204
To		P-204	E-209
Stream Class		CONVEN	CONVEN
Phase		Liquid Phase	Liquid Phase
Temperature	C	51,34606631	51,84208083
Pressure	kPa	101	575
Mass Density	kg/cum	803,2	802,5
Enthalpy Flow	kW	-5614,9	-5611,8
Average MW		51,6	51,6
Mole Flows	kmol/hr	157,0	157,0
Mass Flows	kg/hr	8100,98	8100,98
N2	kg/hr	0,00	0,00
ARGON	kg/hr	0,00	0,00
O2	kg/hr	0,00	0,00
CO2	kg/hr	0,00	0,00
PROPYLEN	kg/hr	0,00	0,00
FORMA-01	kg/hr	1,39	1,39
ACETALD	kg/hr	65,53	65,53
ACROL	kg/hr	7712,17	7712,17
H2O	kg/hr	321,87	321,87
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	0,007215589	0,007215589
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,000	0,000
ARGON		0,000	0,000
O2		0,000	0,000
CO2		0,000	0,000
PROPYLEN		0,000	0,000
FORMA-01		0,000	0,000
ACETALD		0,008	0,008
ACROL		0,952	0,952
H2O		0,040	0,040
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	10,1	10,1

TABLA DE CORRIENTES

Variable	Unidades	25	26
From		T-204	T-204
To		SPLIT	MIX2
Stream Class		CONVEN	CONVEN
Phase		Liquid Phase	Liquid Phase
Temperature	C	110,6745101	114,3833189
Pressure	kPa	575	575
Mass Density	kg/cum	721,9	708,8
Enthalpy Flow	kW	-3031,2	-2272,3
Average MW		47,8	55,4
Mole Flows	kmol/hr	78,5	78,5
Mass Flows	kg/hr	3754,28	4346,70
N2	kg/hr	0,00	0,00
ARGON	kg/hr	0,00	0,00
O2	kg/hr	0,00	0,00
CO2	kg/hr	0,00	0,00
PROPYLEN	kg/hr	0,00	0,00
FORMA-01	kg/hr	1,38	0,00
ACETALD	kg/hr	54,55	10,98
ACROL	kg/hr	3400,25	4311,93
H2O	kg/hr	298,09	23,78
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	4,25123E-10	0,007215626
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,000	0,000
ARGON		0,000	0,000
O2		0,000	0,000
CO2		0,000	0,000
PROPYLEN		0,000	0,000
FORMA-01		0,000	0,000
ACETALD		0,015	0,003
ACROL		0,906	0,992
H2O		0,079	0,005
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	5,20	6,13

TABLA DE CORRIENTES

Variable	Unidades	27	28
From		MIX2	SPLIT
To			
Stream Class		CONVEN	CONVEN
Phase		Liquid Phase	Liquid Phase
Temperature	C	30	110,6745155
Pressure	kPa	101	575
Mass Density	kg/cum	8,3	721,9
Enthalpy Flow	kW	-2276,2	-75,8
Average MW		55,4	47,8
Mole Flows	kmol/hr	78,5	2,0
Mass Flows	kg/hr	4351,01	93,86
N2	kg/hr	0,00	0,00
ARGON	kg/hr	0,00	0,00
O2	kg/hr	0,00	0,00
CO2	kg/hr	0,00	0,00
PROPYLEN	kg/hr	0,00	0,00
FORMA-01	kg/hr	0,00	0,03
ACETALD	kg/hr	10,98	1,36
ACROL	kg/hr	4311,93	85,01
H2O	kg/hr	23,78	7,45
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	0,007215626	1,06281E-11
HIDROQUI	kg/hr	4,31	0
Mass Fractions			
N2		0,000	0,000
ARGON		0,000	0,000
O2		0,000	0,000
CO2		0,000	0,000
PROPYLEN		0,000	0,000
FORMA-01		0,000	0,000
ACETALD		0,003	0,015
ACROL		0,991	0,906
H2O		0,005	0,079
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,001	0,000
Volume Flow	cum/hr	527	0,130

TABLA DE CORRIENTES

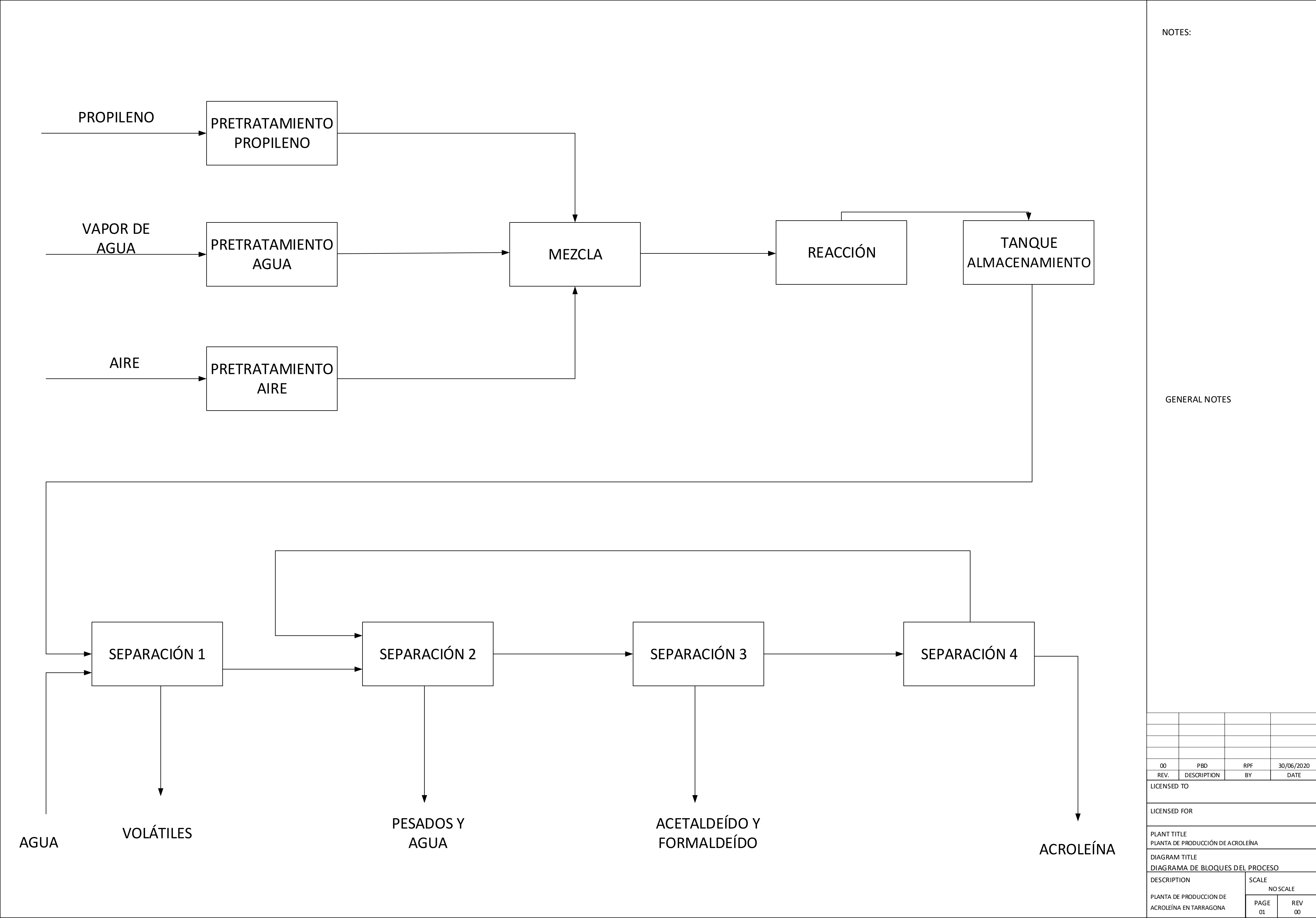
Variable	Unidades	29	30
From		SPLIT	V-101
To		V-101	T-202
Stream Class		CONVEN	CONVEN
Phase		Liquid Phase	
Temperature	C	110,6745155	51,57394489
Pressure	kPa	575	101
Mass Density	kg/cum	721,9	7,6
Enthalpy Flow	kW	-2955,4	-2955,4
Average MW		47,8	47,8
Mole Flows	kmol/hr	76,5	76,5
Mass Flows	kg/hr	3660,42	3660,42
N2	kg/hr	0,00	0,00
ARGON	kg/hr	0,00	0,00
O2	kg/hr	0,00	0,00
CO2	kg/hr	0,00	0,00
PROPYLEN	kg/hr	0,00	0,00
FORMA-01	kg/hr	1,35	1,35
ACETALD	kg/hr	53,19	53,19
ACROL	kg/hr	3315,24	3315,24
H2O	kg/hr	290,64	290,64
AC-ACET	kg/hr	0,00	0,00
AC-ACRY	kg/hr	4,14494E-10	4,14494E-10
HIDROQUI	kg/hr	0	0
Mass Fractions			
N2		0,000	0,000
ARGON		0,000	0,000
O2		0,000	0,000
CO2		0,000	0,000
PROPYLEN		0,000	0,000
FORMA-01		0,000	0,000
ACETALD		0,015	0,015
ACROL		0,906	0,906
H2O		0,079	0,079
AC-ACET		0,000	0,000
AC-ACRY		0,000	0,000
HIDROQUI		0,000	0,000
Volume Flow	cum/hr	5,07	482

TABLA DE CORRIENTES

Variable	Unidades	31
From		
To		MIX2
Stream Class		CONVEN
Phase		Liquid Phase
Temperature	C	30
Pressure	kPa	101
Mass Density	kg/cum	1303,6
Enthalpy Flow	kW	-3,9
Average MW		110,1
Mole Flows	kmol/hr	0,0
Mass Flows	kg/hr	4,31
N2	kg/hr	0,00
ARGON	kg/hr	0,00
O2	kg/hr	0,00
CO2	kg/hr	0,00
PROPYLEN	kg/hr	0,00
FORMA-01	kg/hr	0,00
ACETALD	kg/hr	0,00
ACROL	kg/hr	0,00
H2O	kg/hr	0,00
AC-ACET	kg/hr	0,00
AC-ACRY	kg/hr	0
HIDROQUI	kg/hr	4,31
Mass Fractions		
N2		0,000
ARGON		0,000
O2		0,000
CO2		0,000
PROPYLEN		0,000
FORMA-01		0,000
ACETALD		0,000
ACROL		0,000
H2O		0,000
AC-ACET		0,000
AC-ACRY		0,000
HIDROQUI		1,000
Volume Flow	cum/hr	0,003

TABLA DE CORRIENTES

ANEXO 2: DIAGRAMAS



- E-101-PRECALENTADOR PROPILENO
- E-102-PRECALENTADOR DE VAPOR DE AGUA
- E-103-PRECALENTADOR DE AIRE
- C-101-COMPRESOR DE AIRE
- M-101-FILTRO DEL AIRE
- T-202-TORRE DESTILACIÓN PLATOS
- E-201-CONDENSADOR PARCIAL T-202
- E-202-EBULLIDOR T-202
- P-205 A/B-BOMBA PREVIA A T-202
- D-201-ACUMULAR DESTILADO T-202
- E-208-INTERCAMBIADOR PREVIO A T-203
- E-207-INTERCAMBIADOR PREVIO A T-203
- P-201 A/B-BOMBA REFLUJO T-202
- R-101-REACTOR TUBULAR DE LECHO FIJO
- E-104-INTERCAMBIADOR ENFRIAR EFLUENTE REACTOR

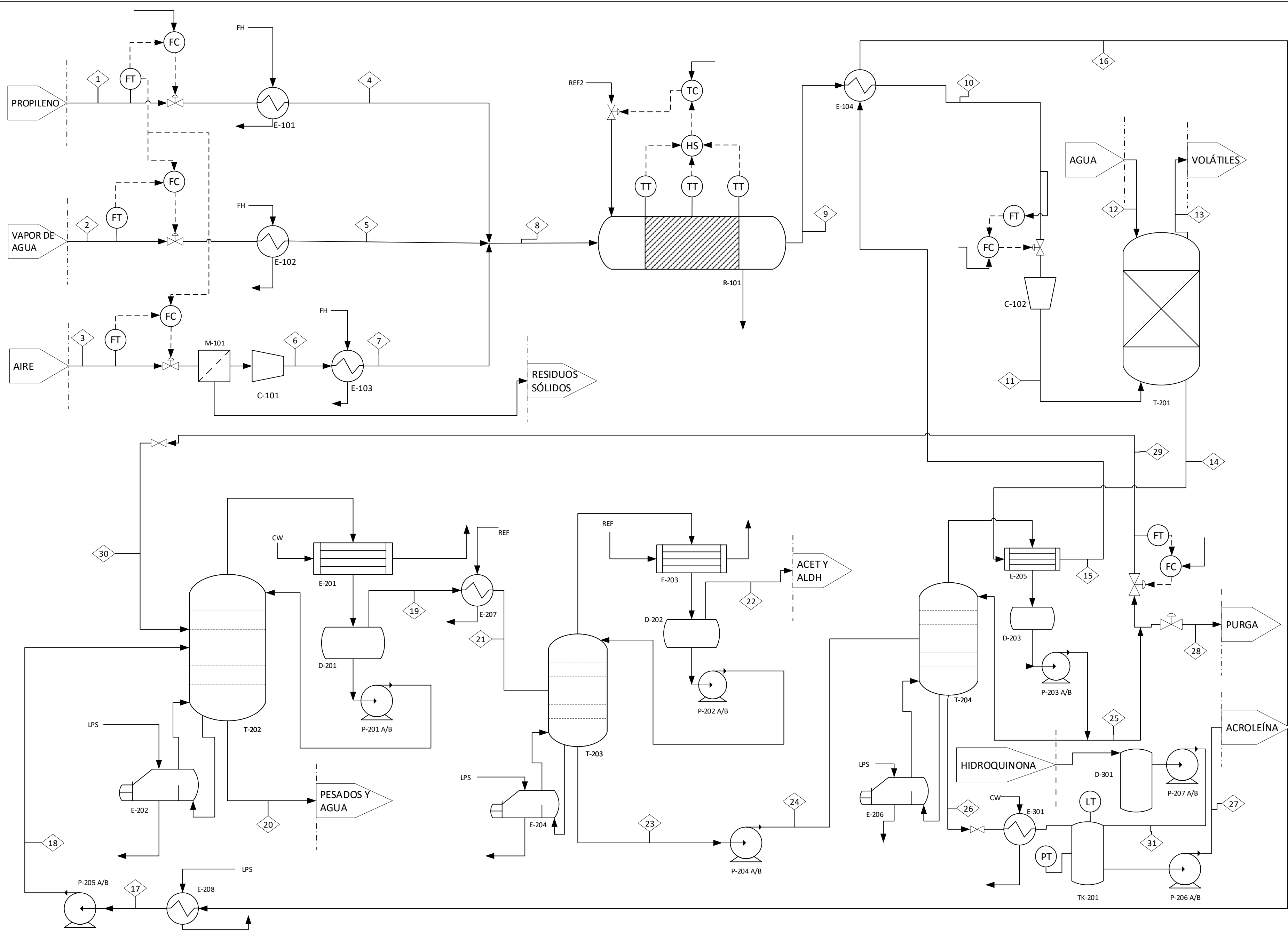
- T-203-TORRE DESTILACIÓN PLATOS
- E-203-CONDENSADOR PARCIAL T-203
- E-204-EBULLIDOR T-203
- D-202-ACUMULADOR DESTILADO T-203
- P-202 A/B-BOMBA REFLUJO T-203
- P-204 A/B-BOMBA PREVIA A T-204
- TK-101-TANQUE ALMACENAMIENTO INTERMEDIO

- C-102-COMPRESOR PARA TORRE ABSORCIÓN
- T-201-TORRE ABOSRCIÓN CON RELLENO
- T-204-TORRE DESTILACIÓN PLATOS
- E-205-CONDENSADOR TOTAL T-204
- D-203-ACUMULADOR DESTILADO T-204
- E-206-EBULLIDOR T-204
- P-203 A/B-BOMBA REFLUJO T-204
- D-301- TANQUE HIFROQUINONA

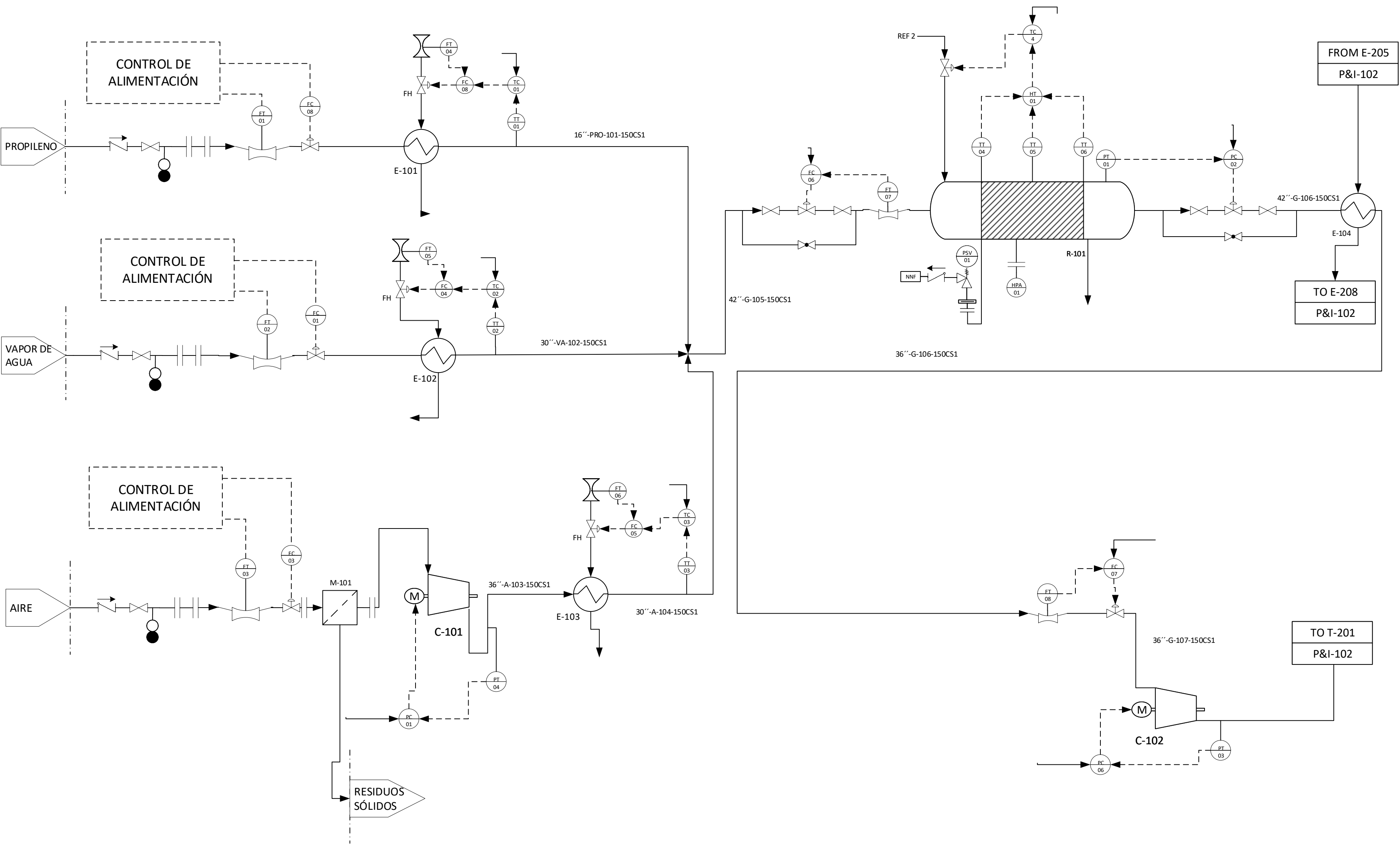
- P-206 A/B- BOMBA ACROLEÍNA
- P-207 A/B- BOMBA HIDROQUINONA

NOTES:

GENERAL NOTES



00	PFD	RPF	30/06/2020
REV.	DESCRIPTION	BY	DATE
LICENSED TO			
LICENSED FOR			
PLANT TITLE			
PLANTA DE PRODUCCIÓN DE ACROLEÍNA			
DIAGRAM TITLE			
DIAGRAMA DE FLUJO DEL PROCESO			
DESCRIPTION		SCALE	
PLANTA DE PRODUCCION DE ACROLEÍNA EN TARRAGONA		NO SCALE	
		PAGE	REV
		01	00



R-101

FLUJO VOLUMÉTRICO: 78514 m³/h
TEMPERATURA DE DISEÑO: 320 °C
PRESIÓN DE DISEÑO: 350 kPaG

C-101

FLUJO MÁSIKO: 43385 kg/h
TEMPERATURA DE DISEÑO: 110 °C
PRESIÓN ENTRADA: -0.32 kPaG
PRESIÓN SALIDA: 78.67 kPaG

M-101

FLUJO MÁSIKO: 43385 kg/h
FLUJO VOLUMÉTRICO: 25791.5 m³/h
TEMPERATURA DE DISEÑO: 110 °C
PRESIÓN DE DISEÑO: 350 kPaG

C-102

FLUJO MÁSIKO: 72973.7
TEMPERATURA DE DISEÑO:
PRESIÓN ENTRADA: 63.65
PRESIÓN SALIDA: 78.67

E-101

FLUJO VOLUMÉTRICO: 4511.46 m³/h
TEMPERATURA DE DISEÑO: 320 °C
PRESIÓN DE DISEÑO: 350 kPaG

E-103

FLUJO VOLUMÉTRICO: 40422 m³/h
TEMPERATURA DE DISEÑO: 320 °C
PRESIÓN DE DISEÑO: 350 kPaG

E-102

FLUJO VOLUMÉTRICO: 33543.9 m³/h
TEMPERATURA DE DISEÑO: 320 °C
PRESIÓN DE DISEÑO: 350 kPaG

E-104

FLUJO VOLUMÉTRICO: 2603.1
TEMPERATURA DE DISEÑO: 120 °C
PRESIÓN DE DISEÑO: 650 kPaG

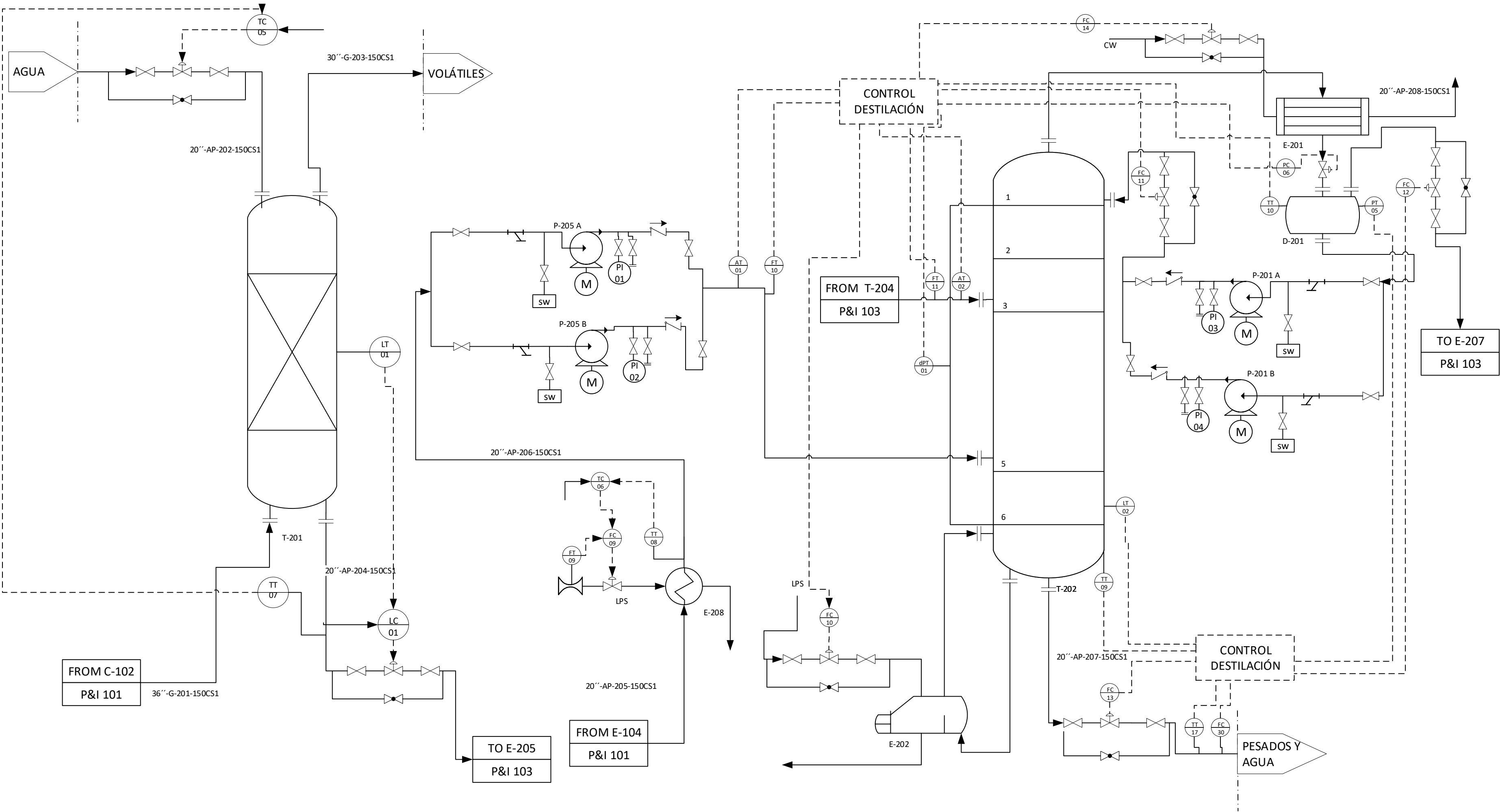
NOTES:

GENERAL NOTES

EQUIPEMENT LIST

- E-101- PRECALENTADOR PROPILENO
- E-102- PRECALENTADOR VAPOR DE AGUA
- E-103- PRECALENTADOR AIRE
- C-101- COMPRESOR AIRE
- M-101- FILTRO DEL AIRE
- C-102- COMPRESOR PREVIO TORRE ABSORCIÓN
- R-101- REACTOR TUBULAR LECHO FIJO
- E-104- INTERCAMBIADOR ENFRIAR EFLUENTE REACTOR

00	PFD	RPF	30/06/2020
REV.	DESCRIPTION	BY	DATE
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DIAGRAM TITLE			
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NOTES:

GENERAL NOTES

EQUIPEMENT LIST

- T-201-TORRE ABSORCIÓN
- T-202-TORRE DESTILACIÓN
- E-208- INTERCAMBIADOR PREVIO A T-202
- P-205 A/B- BOMBA PREVIA A T-201
- E-201- CONDENSADOR PARCIAL T-202
- D-201- ACUMULADR DESTILADO T-202
- P-201 A/B- BOMBA REFLUJO T-202
- E-202- EBULLIDOR T-202

T-201

D: 3.33 m
L: 4 m
ETAPAS: 8

P-201 A/B

FLUJO MÁSIKO: 225620 kg/h
TEMPERATURA DE DISEÑO: 15 °C
PRESIÓN DE DISEÑO: 0 kPaG

E-201

FLUJO VOLUMÉTRICO: 277.52 m³/h
TEMPERATURA DE DISEÑO: 61 °C
PRESIÓN DE DISEÑO: 350 kPaG

E-202

FLUJO VOLUMÉTRICO: 277.52 m³/h
TEMPERATURA DE DISEÑO: 110 °C
PRESIÓN DE DISEÑO: 350 kPaG

T-202

D: 3.7 m
L: 3.2 m
ETAPAS: 6

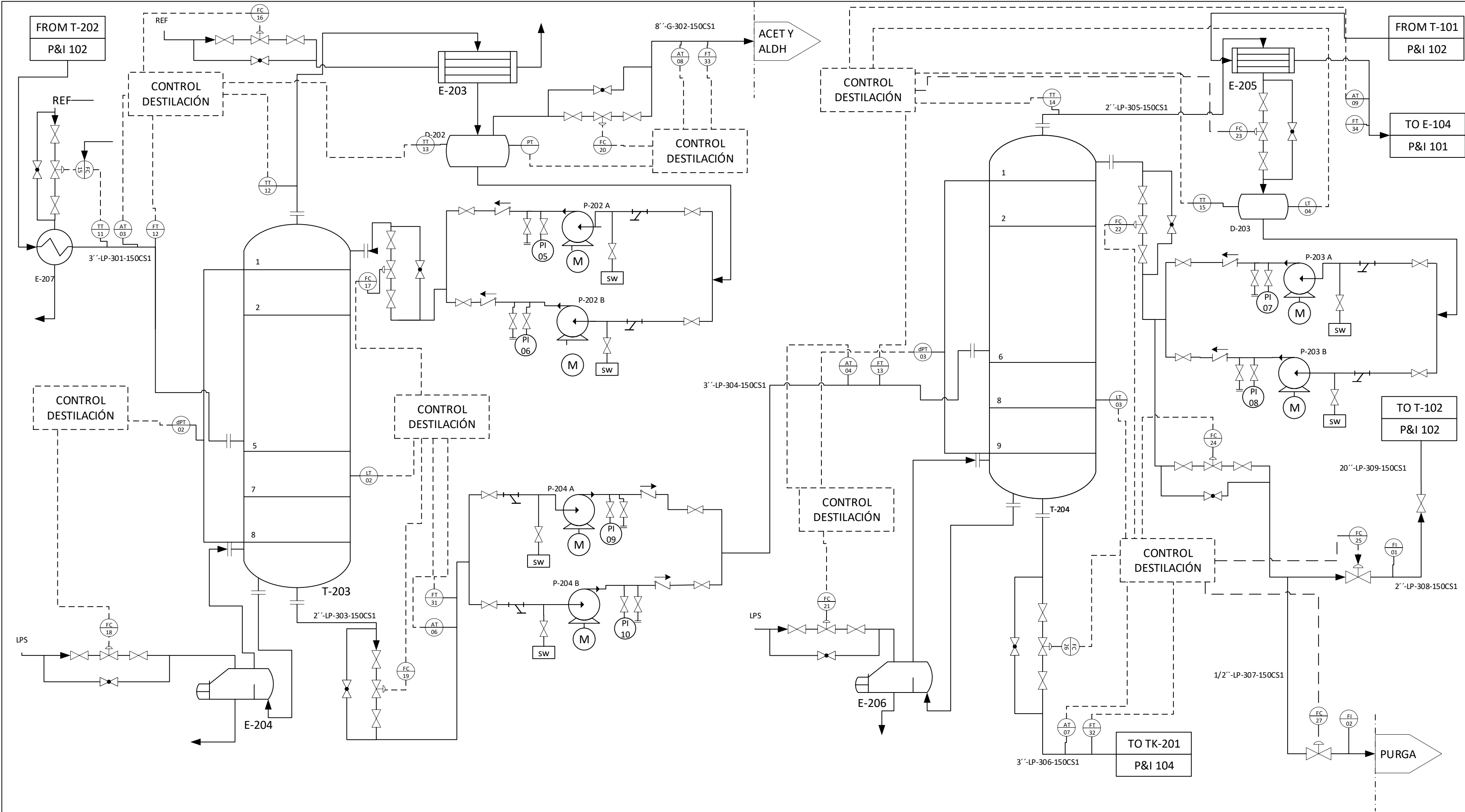
P-205 A/B

FLUJO MÁSIKO: 551440 kg/h
TEMPERATURA DE DISEÑO: 48.85 kPaG
PRESIÓN DE DISEÑO: 78.67 kPaG

E-208

FLUJO VOLUMÉTRICO: 619.13 m³/h
TEMPERATURA DE DISEÑO: 110 °C
PRESIÓN DE DISEÑO: 350 kPaG

00	PFD	RPF	30/06/2020
REV.	DESCRIPTION	BY	DATE
LICENSED TO			
LICENSED FOR			
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PLANTA DE PRODUCCIÓN DE ACROLEÍNA			
DIAGRAM TITLE			
A2-PI-102			
DESCRIPTION		SCALE	
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NOTES:

GENERAL NOTES

EQUIPEMENT LIST

- T-203-TORRE DESTILACIÓN
- T-204-TORRE DESTILACIÓN
- E-203-CONDENSADOR PARCIAL T-203
- E-204-EBULLIDOR T-203
- E-205- CONDENSADOR TOTAL T-204
- E-206- EBULLIDOR T-204
- D-202- ACUMULADOR DESTILADO T-203
- D-203- ACUMULADOR DESTILADO T-204
- P-202 A/B- BOMBA REFLUJO T-202
- P-203 A/B- BOMBA REFLUJO T-204
- P-204 A/B- BOMBA PREVIA A T-204
- E-207- INTERCAMBIADOR PREVIO T-203

T-203

L: 3.65 m
D: 1.08 m
ETAPAS: 8

P-203 A/B

FLUJO MÁSIKO: 89954.4 kg/h
TEMPERATURA DE DISEÑO: 10 °C
PRESIÓN DE DISEÑO: 0 kPaG

E-207

FLUJO VOLUMÉTRICO: 36 m³/h
TEMPERATURA DE DISEÑO: 60 °C
PRESIÓN DE DISEÑO: 350 kPaG

E-205

FLUJO VOLUMÉTRICO: 2602.93 m³/h
TEMPERATURA DE DISEÑO: 121 °C
PRESIÓN DE DISEÑO: 650 kPaG

T-204

L: 4.26 m
D: 1.26 m
ETAPAS: 9

P-204 A/B

FLUJO MÁSIKO: 10951.5 kg/h
TEMPERATURA DE DISEÑO: 62 °C
PRESIÓN DE DISEÑO: 650 kPaG

E-203

FLUJO VOLUMÉTRICO: 4671.67 m³/h
TEMPERATURA DE DISEÑO: 11 °C
PRESIÓN DE DISEÑO: 350 kPaG

P-202 A/B

FLUJO MÁSIKO: 15031 kg/h
TEMPERATURA DE DISEÑO: 20 °C
PRESIÓN DE DISEÑO: 0 kPaG

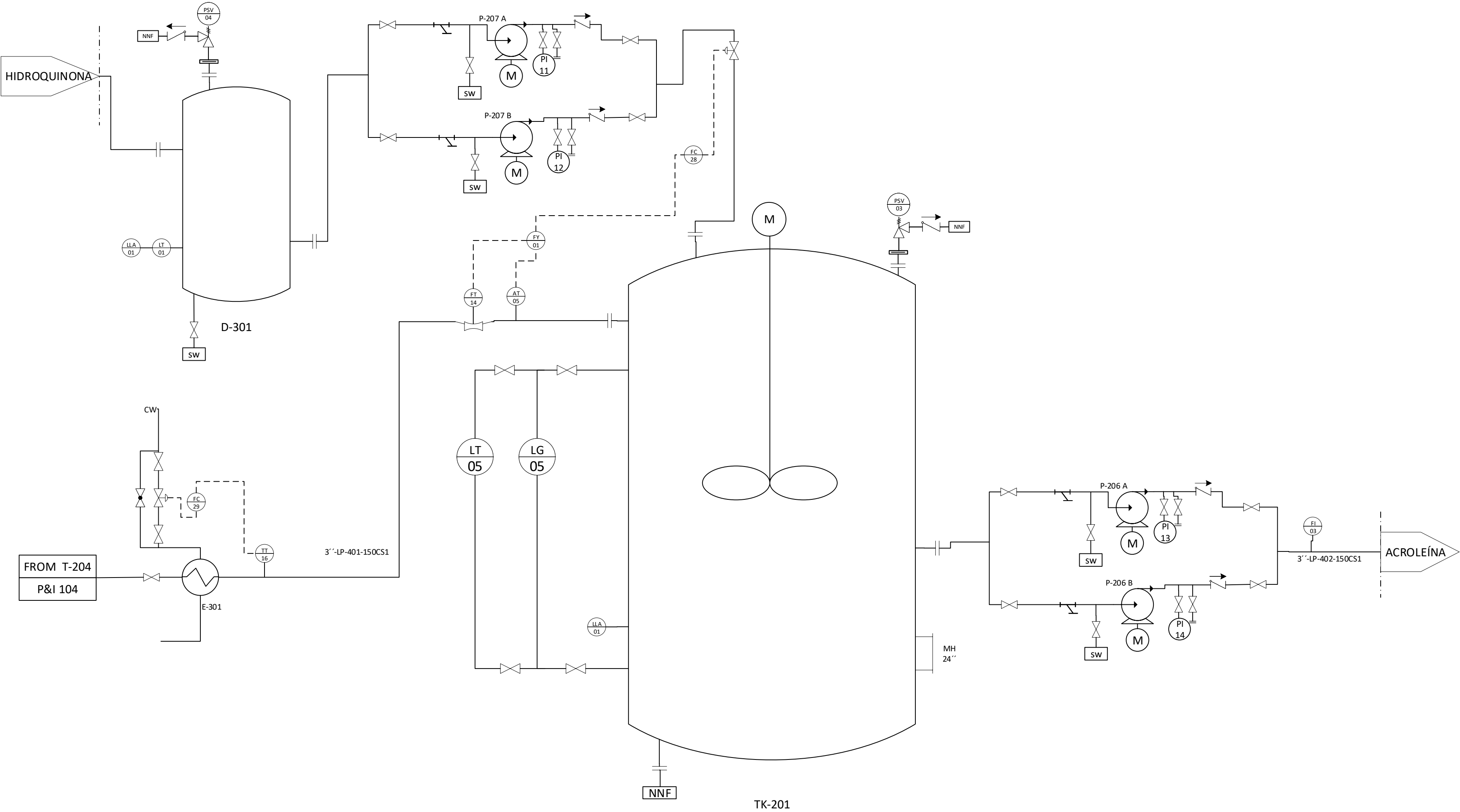
E-206

FLUJO VOLUMÉTRICO: 2602.93 m³/h
TEMPERATURA DE DISEÑO: 124 °C
PRESIÓN DE DISEÑO: 650 kPaG

E-204

FLUJO VOLUMÉTRICO: 4671.67 m³/h
TEMPERATURA DE DISEÑO: 61 °C
PRESIÓN DE DISEÑO: 350 kPaG

00	PFD	RPF	30/06/2020
REV.	DESCRIPTION	BY	DATE
LICENSED TO			
LICENSED FOR			
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PLANTA DE PRODUCCIÓN DE ACROLEÍNA			
DIAGRAM TITLE			
A2-P&I-103			
DESCRIPTION		SCALE	
PLANTA DE PRODUCCION DE ACROLEÍNA EN TARRAGONA		NO SCALE	
		PAGE	REV
		01	00



D-301

CAPACIDAD:
TEMPERATURA DE DISEÑO:
PRESIÓN DE DISEÑO:

TK-201

CAPACIDAD:
TEMPERATURA DE DISEÑO:
PRESIÓN DE DISEO:

E-301

FLUJO VOLUMÉTRICO: 8.29 m³/h
TEMPERATURA DE DISEÑO: 125 °C
PRESIÓN DE DISEÑO: 0 kPaG

P-206 A/B

FLUJO MÁSSICO: 5876 kg/h
TEMPERATURA DE DISEÑO: 50 °C
PRESIÓN DE OPERACIÓN: 0 kPaG

P-207 A/B

FLUJO MÁSSICO: 587.6 kg/h
TEMPERATURA DE DISEÑO: 40 °C
PRESIÓN DE OPERACIÓN: 0 KPaG

NOTES:

GENERAL NOTES

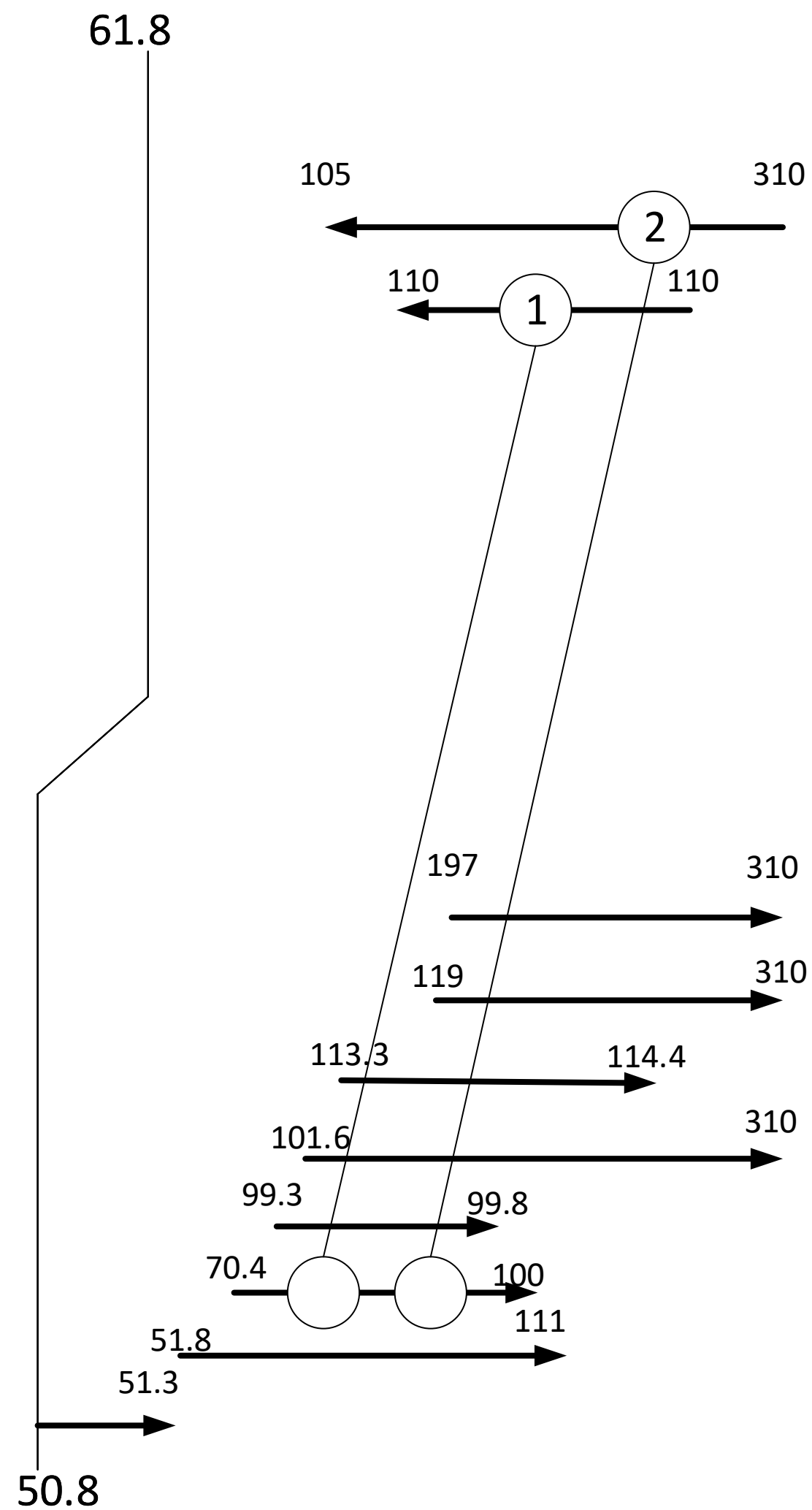
EQUIPEMENT LIST

- TK-201- TANQUE ACROLEÍNA
- P-206 A/B- BOMBA ACROLEÍNA
- P-207 A/B- BOMBA HIDROQUINONA
- D-301- DEPOSITO IDROQUINONA
- E-301- ENFRIADOR ACROLEÍNA

00	PFD	RPF	30/06/2020
REV.	DESCRIPTION	BY	DATE
LICENSED TO			
LICENSED FOR			
PLANT TITLE			
PLANTA DE PRODUCCIÓN DE ACROLEÍNA			
DIAGRAM TITLE			
A2-P&I-104			
DESCRIPTION		SCALE	
PLANTA DE PRODUCCION DE ACROLEÍNA EN TARRAGONA		NO SCALE	
	PAGE	REV	
	01	00	

ANEXO 3: DIAGRAMA DE TRAMA

9	Cond.	T-204	Cond.	T-202
19	Cond.	T-203		
1				
2	Ebu.	T-104		
3	Ebu.	T-102		
14				
24	Ebu.	T-103		



ANEXO 4: LISTAS DE EQUIPOS Y HOJAS DE ESPECIFICACIONES



Universidad de Valladolid

EQUIPMENT LIST

REV.	0					JOB NO.	2020
DATE	04/07/2020					UNIT	PLANTA ACROLEÍNA
BY	RPF					CLIENT	UVA
APPR'V						LOCATION	TARRAGONA

LEGEND:


1.- DRIVER: _____ M-MOTOR T - TURBINE ORIGIN: E - SPAIN O - OTHERS


2.- TODAS LAS BOMBAS DEL PROCESO SON CENTRÍFUGAS


Universidad de Valladolid

INSTRUMENT LIST

REV.	0					JOB N°	2020
DATE	04/07/2020					UNIT	PLANTA ACROLEÍNA
BY	RPF					CLIENT	
APPR'V						LOCATION	TARRAGONA
REV.	ITEM NUMBER	P&ID N°	SERVICE			NOTES	
	1	FT-01	P&I-101	FLUJO DE PROPILENO			
	2	FT-02	P&I-101	FLUJO DE VAPOR DE AGUA			
	3	FT-03	P&I-101	FLUJO DE AIRE			
	4	FC-01	P&I-101	FLUJO DE PROPILENO			
	5	FC-02	P&I-101	FLUJO DE VAPOR DE AGUA			
	6	FC-03	P&I-101	FLUJO DE AIRE			
	7	FT-04	P&I-101	FLUJO DE SERVICIO AUXILIAR E-101			
	8	FT-05	P&I-101	FLUJO DE SERVICIO AUXILIAR E-102			
	9	FT-06	P&I-101	FLUJO DE SERVICIO AUXILIAR E-103			
	10	FT-07	P&I-101	FLUJO ENTRADA REACTOR			
	11	FT-08	P&I-101	FLUJO SALIDA TK-101			
	12	FC-04	P&I-101	FLUJO DE SERVICIO AUXILIAR E-102			
	13	FC-05	P&I-101	FLUJO DE SERVICIO AUXILIAR E-103			
	14	FC-06	P&I-101	FLUJO ENTRADA REACTOR			
	15	FC-07	P&I-101	FLUJO SALIDA TK-101			
	16	FC-08	P&I-101	FLUJO DE SERVICIO AUXILIAR E-101			
	17	TT-01	P&I-101	TEMPERATURA PROPILENO			
	18	TT-02	P&I-101	TEMPERATURA VAPOR DE AGUA			
	19	TT-03	P&I-101	TEMPERATURA AIRE			
	20	TT-04	P&I-101	TEMPERATURA 1 REACTOR			
	21	TT-05	P&I-101	TEMPERATURA 2 REACTOR			
	22	TT-06	P&I-101	TEMPERATURA 3 REACTOR			
	23	TC-01	P&I-101	TEMPERATURA PROPILENO			
	24	TC-02	P&I-101	TEMPERATURA VAPOR DE AGUA			
	25	TC-03	P&I-101	TEMPERATURA AIRE			
	26	TC-04	P&I-101	TEMPERATURA REACTOR			
	27	HT-01	P&I-101	MAYOR TEMPERATURA EN EL REACTOR			
	28	PT-01	P&I-101	PRESIÓN REACTOR			
	29	PSV-01	P&I-101	PRESIÓN ALIVIO REACTOR			
	30	PT-04	P&I-101	PRESIÓN SALIDA C-101			
	31	PC-01	P&I-101	CONTROLADOR VELOCIDAD DE C-101			
	32	PC-02	P&I-101	CONTROLADOR FLUJO SALIDA REACTOR			
	33	HPA-01	P&I-101	ALARMA POR ALTA PRESION EN REACTOR			
	34	TT-07	P&I-102	TEMPERATURA SALIDA LÍQUIDO T-201			
	35	TT-08	P&I-102	TEMPERATURA ENTRADA T-202			
	36	TT-09	P&I-102	TEMPERATURA CABEZA T-202			
	37	TT-10	P&I-102	TEMPERATURA DESTILADO T-202			
	38	TC-05	P&I-102	CONTROLADOR CAUDAL DE AGUA EN T-201			
	39	LT-01	P&I-102	NIVEL DE LÍQUIDO EN T-201			
	40	LC-01	P&I-102	CONTROLADOR FLUJO EFLUENTE LÍQUIDO T-201			
	41	LT-02	P&I-102	NIVEL DE LÍQUIDO EN T-202			
	42	PI-01	P&I-102	INDICADOR DE PRESIÓN ENTRADA T-202			
	43	PI-02	P&I-102	INDICADOR DE PRESIÓN ENTRADA T-202			
	44	PI-03	P&I-102	INDICADOR DE PRESIÓN REFLUJO T-202			
	45	PI-04	P&I-102	INDICADOR DE PRESIÓN REFLUJO T-202			
	46	TC-06	P&I-102	CONTROLADOR TEMPERATURA ENTRADA T-202			
	47	FC-09	P&I-102	CONTROLADOR FLUJO LPS E-208			
	48	FC-10	P&I-102	CONTROLADOR FLUJO LPS E-202			
	49	FC-11	P&I-102	CONTROLADOR REFLUJO T-202			

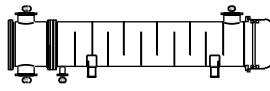
 Universidad de Valladolid						INSTRUMENT LIST	
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DATE	04/07/2020					UNIT	PLANTA ACROLEÍNA
BY	RPF					CLIENT	
APPR'V						LOCATION	TARRAGONA
REV.	ITEM NUMBER	P&ID N°	SERVICE			NOTES	
	50	FC-12	P&I-102	CONTROLADOR FLUJO DESTILADOR T-202			
	51	FC-13	P&I-102	CONTROLADOR FLUJO DE COLAS T-202			
	52	FC-14	P&I-102	CONTROLADOR FLUJO CW E-201			
	53	AT-01	P&I-102	ANÁLISIS ALIMENTACIÓN T-202 (PLATO 5)			
	54	AT-02	P&I-102	ANÁLISIS ALIMENTACIÓN T-202 (PLATO 3)			
	55	FT-09	P&I-102	FLUJO LPS E-208			
	56	FT-10	P&I-102	FLUJO ALIMENTACIÓN T-202 (PLATO 5)			
	57	FT-11	P&I-102	FLUJO ALIMENTACIÓN T-202 (PLATO 3)			
	58	DPT-01	P&I-102	DIFERENCIA DE PRESIÓN T-202			
	59	PT-05	P&I-102	PRESIÓN DEPÓSITO REFLUJO T-202			
	60	AT-03	P&I-103	ANÁLISIS ALIMENTACIÓN T-203			
	61	AT-04	P&I-103	ANÁLISIS ALIMENTACIÓN T-204			
	62	PI-05	P&I-103	INDICADOR DE PRESIÓN REFLUJO T-203			
	63	PI-06	P&I-103	INDICADOR DE PRESIÓN REFLUJO T-203			
	64	PI-07	P&I-103	INDICADOR DE PRESIÓN REFLUJO T-204			
	65	PI-08	P&I-103	INDICADOR DE PRESIÓN REFLUJO T-204			
	66	PI-09	P&I-103	INDICADOR DE PRESIÓN ALIMENTACIÓN T-204			
	67	PI-10	P&I-103	INDICADOR DE PRESIÓN ALIMENTACIÓN T-204			
	68	TT-11	P&I-103	TEMPERATURA ALIMENTACIÓN T-203			
	69	TT-12	P&I-103	TEMPERATURA CABEZAS T-203			
	70	TT-13	P&I-103	TEMPERATURA DESTILADO T-203			
	71	TT-14	P&I-103	TEMPERATURA CABEZAS T-204			
	72	TT-15	P&I-103	TEMPERATURA DESTILADO T-204			
	73	FT-12	P&I-103	FLUJO ALIMENTACIÓN T-203			
	74	FT-13	P&I-103	FLUJO ALIMENTACIÓN T-204			
	75	LT-02	P&I-103	NIVEL DE LÍQUIDO T-203			
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	77	DPT-02	P&I-103	DIFERENCIA DE PRESIÓN T-203			
	78	DPT-03	P&I-103	DIFERENCIA DE PRESIÓN T-204			
	79	LT-04	P&I-103	NIVEL DE LÍQUIDO DEPÓSITO REFLUJO T-204			
	80	FC-15	P&I-103	CONTROL CAUDAL REFRIGERANTE E-203			
	81	FC-16	P&I-103	CONTROL CAUDAL REFRIGERANTE E-208			
	82	FC-17	P&I-103	CONTROL CAUDAL REFLUJO T-203			
	83	FC-18	P&I-103	CONTROL CAUDAL LPS E-204			
	84	FC-19	P&I-103	CONTROL CAUDAL COLAS T-203			
	85	FC-20	P&I-103	CONTROL CAUDAL DESTILADO			
	86	FC-21	P&I-103	CONTROL CAUDAL LPS E-206			
	87	FC-22	P&I-103	CONTROL CAUDAL REFLUJO T-204			
	88	FC-23	P&I-103	CONTROL CAUDAL SALIDA DE E-205			
	89	FC-24	P&I-103	CONTROL CAUDAL DESTILADO T-204			
	90	FC-25	P&I-103	CONTROL CAUDAL RECIRCULACIÓN A T-202			
	91	FC-26	P&I-103	CONTROL CAUDAL COLAS T-204			
	92	FC-27	P&I-103	CONTROL CAUDAL PURGA T-204			
	93	FI-01	P&I-103	INDICADOR DE FLUJO RECIRCULACIÓN			
	94	FI-02	P&I-103	INDICADOR DE FLUJO DE PURGA			
	95	PI-11	P&I-104	INDICADOR PRESIÓN SALIDA BOMBA P-207			
	96	PI-12	P&I-104	INDICADOR PRESIÓN SALIDA BOMBA P-207			
	97	PI-13	P&I-104	INDICADOR PRESIÓN SALIDA BOMBA P-206			
	98	PI-14	P&I-104	INDICADOR PRESIÓN SALIDA BOMBA P-206			

						INSTRUMENT LIST	
Universidad de Valladolid							
REV.	0					JOB N°	2020
DATE	04/07/2020					UNIT	PLANTA ACROLEÍNA
BY	RPF					CLIENT	
APPR'V						LOCATION	TARRAGONA
REV.	ITEM NUMBER	P&ID N°	SERVICE				
99	FI-03	P&I-104	INDICADOR FLUJO ACROLEÍNA				
100	LT-05	P&I-104	NIVEL LÍQUIDO TK-201				
101	LLA-01	P&I-104	ALARMA DE NIVEL BAJO EN TK-201				
102	TT-16	P&I-104	TEMPERATURA ENTRADA TK-201				
103	PSV-03	P&I-104	PRESIÓN DE ALIVIO TK-201				
104	LG-01	P&I-104	INDICADOR NIVEL TK-201				
105	PSV-04	P&I-104	PRESIÓN DE ALIVIO D-301				
106	AT-05	P&I-104	ANÁLISIS ALIMENTACIÓN TK-201				
107	FT-14	P&I-104	FLUJO ALIMENTACIÓN TK-201				
108	FY-01	P&I-104	CÁLCULO DE CAUDAL DE SALIDA D-301				
109	FC-28	P&I-104	CONTROLADOR FLUJO SALIDA D-301				
110	FC-29	P&I-104	CONTROLADOR FLUJO CW E-301				
111	AT-05	P&I-102	COMPOSICIÓN COLAS T-202				
112	FT-30	P&I-102	FLUJO COLAS T-202				
113	AT-06	P&I-103	COMPOSICIÓN COLAS T-203				
114	AT-07	P&I-103	COMPOSICIÓN COLAS T-204				
115	FT-31	P&I-103	FLUJO COLAS T-203				
116	FT-32	P&I-103	FLUJO COLAS T-204				
117	AT-08	P&I-103	COMPOSICION CABEZAS T-203				
118	FT-33	P&I-103	FLUJO CABEZAS T-203				
119	AT-09	P&I-103	COMPOSICION CABEZAS T-204				
120	FT-34	P&I-103	FLUJO CABEZAS T-204				
121							
122							
123							
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Aspen Exchanger Design and Rating Shell & Tube V11

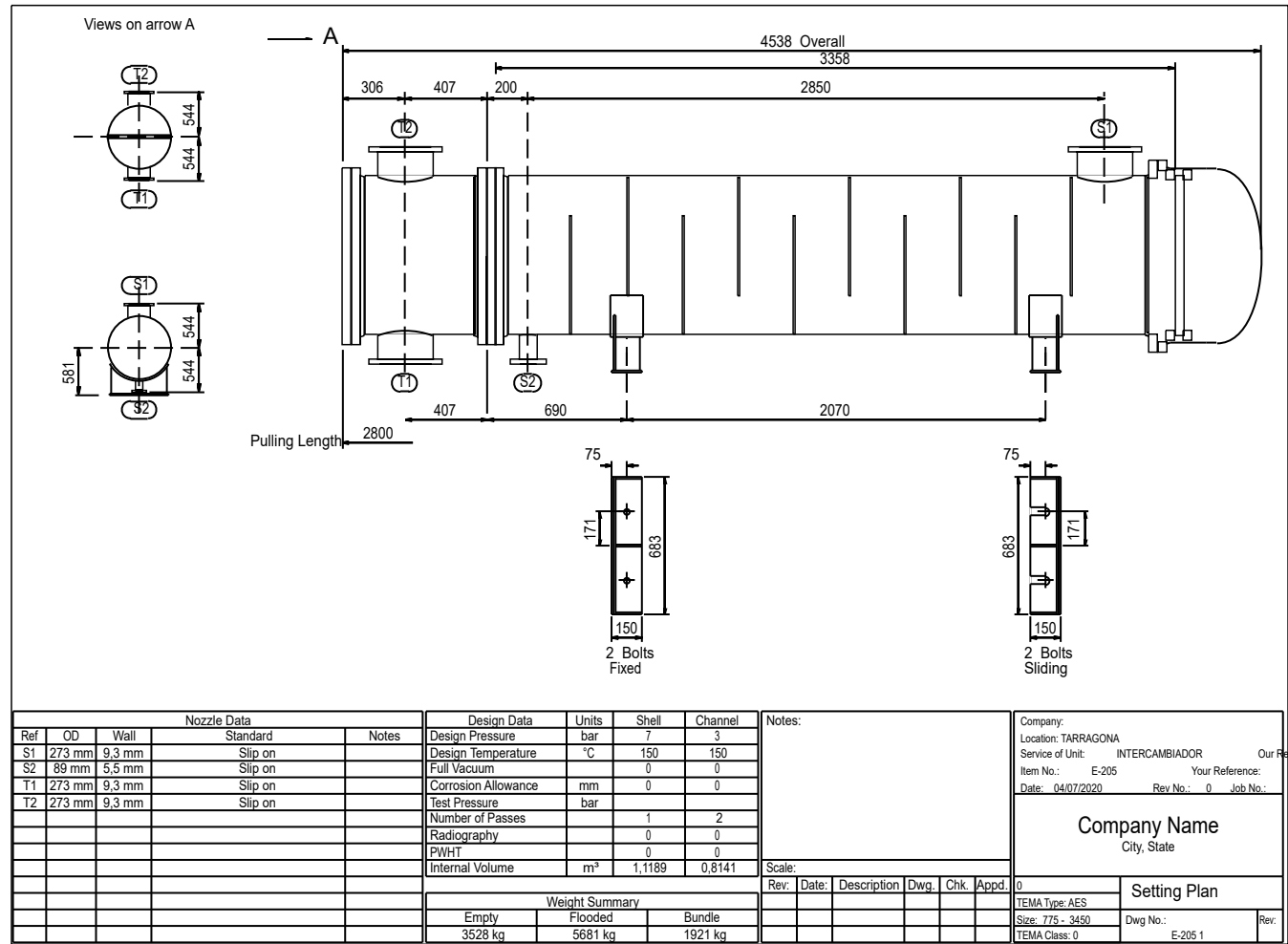
TEMA Sheet

Heat Exchanger Specification Sheet

1	Company:									
2	Location: TARRAGONA									
3	Service of Unit: INTERCAMBIADOR					Our Reference:				
4	Item No.: E-205					Your Reference:				
5	Date: 04/07/2020		Rev No.: 0		Job No.:					
6	Size: 775 - 3450		mm		Type: AES		Horizontal		Connected in: 1 parallel 1 series	
7	Surf/unit(eff.)		114,8		m ²		Shells/unit 1		Surf/shell(eff.) 114,8 m ²	
8	PERFORMANCE OF ONE UNIT									
9	Fluid allocation				Shell Side			Tube Side		
10	Fluid name				S4			14		
11	Fluid quantity, Total				kg/s 4,9615			113,293		
12	Vapor (In/Out)				kg/s 4,9615 0			0 0,0556		
13	Liquid				kg/s 0 4,9615			113,293 113,2374		
14	Noncondensable				kg/s 0 0			0 0		
15										
16	Temperature (In/Out)				°C 110,67 84,36			70,45 77,16		
17	Bubble / Dew point				°C 110,57 / 110,67 110,14 / 110,25			72,65 / 595,34 56,51 / 592,29		
18	Density Vapor/Liquid				kg/m ³ 9,32 / 760,56			/ 946,22 1,51 / 939,32		
19	Viscosity				mPa-s 0,0106 / 0,2345			/ 0,4043 0,0178 / 0,3684		
20	Molecular wt, Vap				47,74			28,96		
21	Molecular wt, NC									
22	Specific heat				kJ/(kg-K) 1,612 / 2,516			/ 4,271 1,232 / 4,305		
23	Thermal conductivity				W/(m-K) 0,0211 / 0,1413			/ 0,5777 0,0249 / 0,579		
24	Latent heat				kJ/kg 570,3 573,1			671,1 1299,1		
25	Pressure (abs)				bar 5,75 5,689			1,8 1,51043		
26	Velocity (Mean/Max)				m/s 3,12 / 7,14			2,35 / 2,8		
27	Pressure drop, allow./calc.				bar 0,26 0,06099			0,36 0,28957		
28	Fouling resistance (min)				m ² -K/W 0,0002			0,0002 0,00024 Ao based		
29	Heat exchanged		3170		kW		MTD (corrected)		33,97 °C	
30	Transfer rate, Service		812,6		Dirty		813,1		Clean 1269,2 W/(m ² -K)	
31	CONSTRUCTION OF ONE SHELL							Sketch		
32					Shell Side		Tube Side			
33	Design/Vacuum/test pressure bar				7 /		3 /			
34	Design temperature / MDMT °C				150 /		150 /			
35	Number passes per shell				1		2			
36	Corrosion allowance mm				0		0			
37	Connections		In mm		1 254,51 / -		1 254,51 / -			
38	Size/Rating		Out		1 77,93 / -		1 254,51 / -			
39	ID		Intermediate		/ -		/ -			
40	Tube #: 596		OD: 19,05		Tks. Average 1,65		mm		Length: 3450 mm Pitch: 25,4 mm Tube pattern: 90	
41	Tube type: Plain		Insert: None		Fin#:		#/m		Material: SS 316	
42	Shell SS 316		ID 775		OD 789		mm		Shell cover SS 316	
43	Channel or bonnet		SS 316						Channel cover SS 316	
44	Tubesheet-stationary		SS 316		-				Tubesheet-floating SS 316	
45	Floating head cover		SS 316						Impingement protection None	
46	Baffle-cross SS 316		Type		Single segmental		Cut(%d) 24,8		HorizSpacing: c/c 275 mm	
47	Baffle-long -		Seal Type						Inlet 372,21 mm	
48	Supports-tube		U-bend		0		Type			
49	Bypass seal				Tube-tubesheet joint		Expanded only (2 grooves)(App.A 'i')			
50	Expansion joint -		Type		None					
51	RhoV2-Inlet nozzle		1020		Bundle entrance		642		Bundle exit 27 kg/(m-s ²)	
52	Gaskets - Shell side		Flat Metal Jacket Fibe		Tube side		Flat Metal Jacket Fibe			
53	Floating head		Flat Metal Jacket Fibe							
54	Code requirements		ASME Code Sec VIII Div 1		TEMA class		R - refinery service			
55	Weight/Shell		3527,7		Filled with water		5681,3		Bundle 1920,6 kg	
56	Remarks									
57										
58										

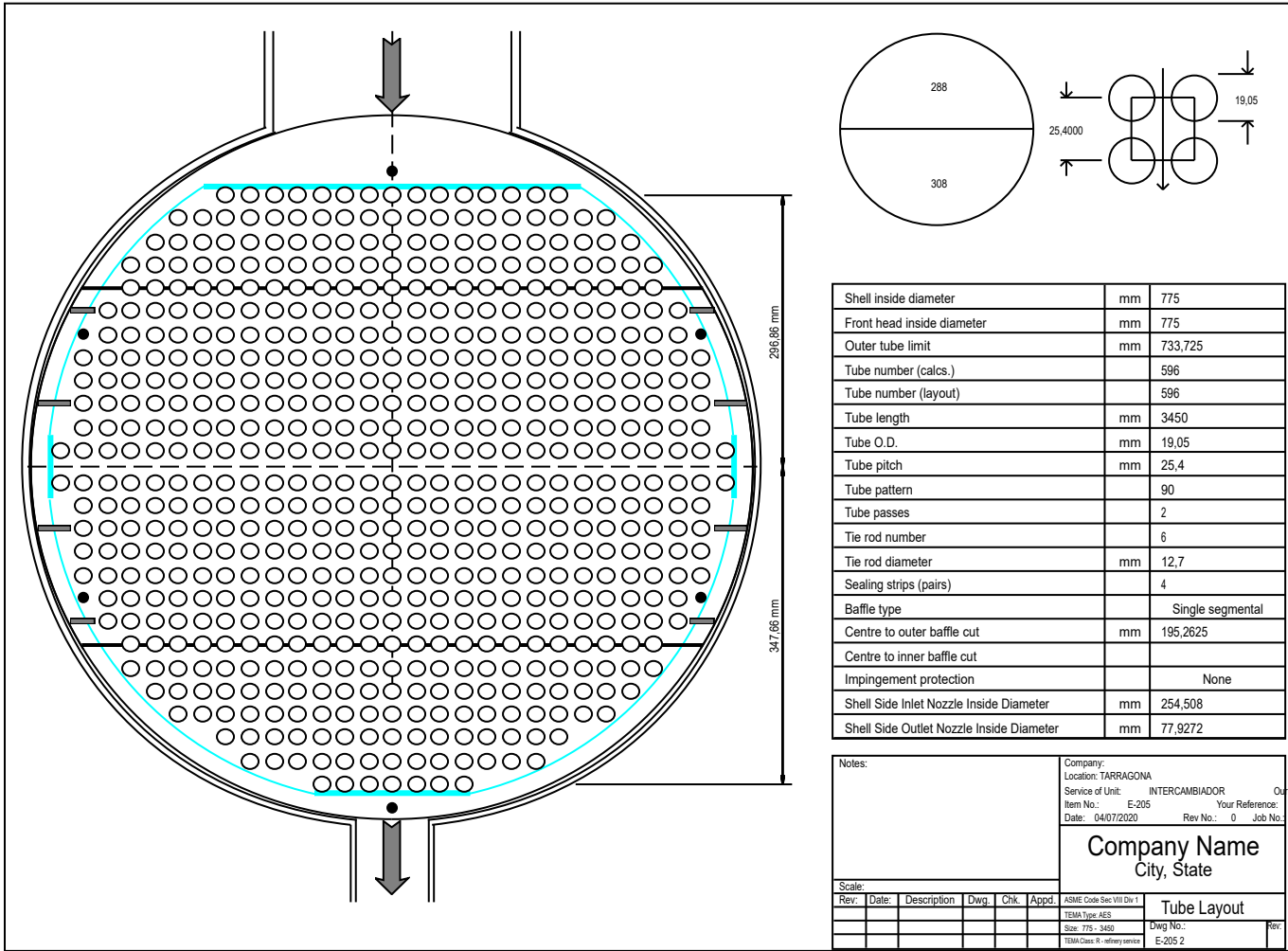
Aspen Exchanger Design and Rating Shell & Tube V11

Setting Plan



Aspen Exchanger Design and Rating Shell & Tube V11

Tubesheet Layout

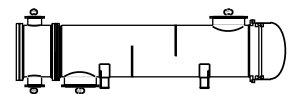


Aspen Exchanger Design and Rating Shell & Tube V11

TEMA Sheet

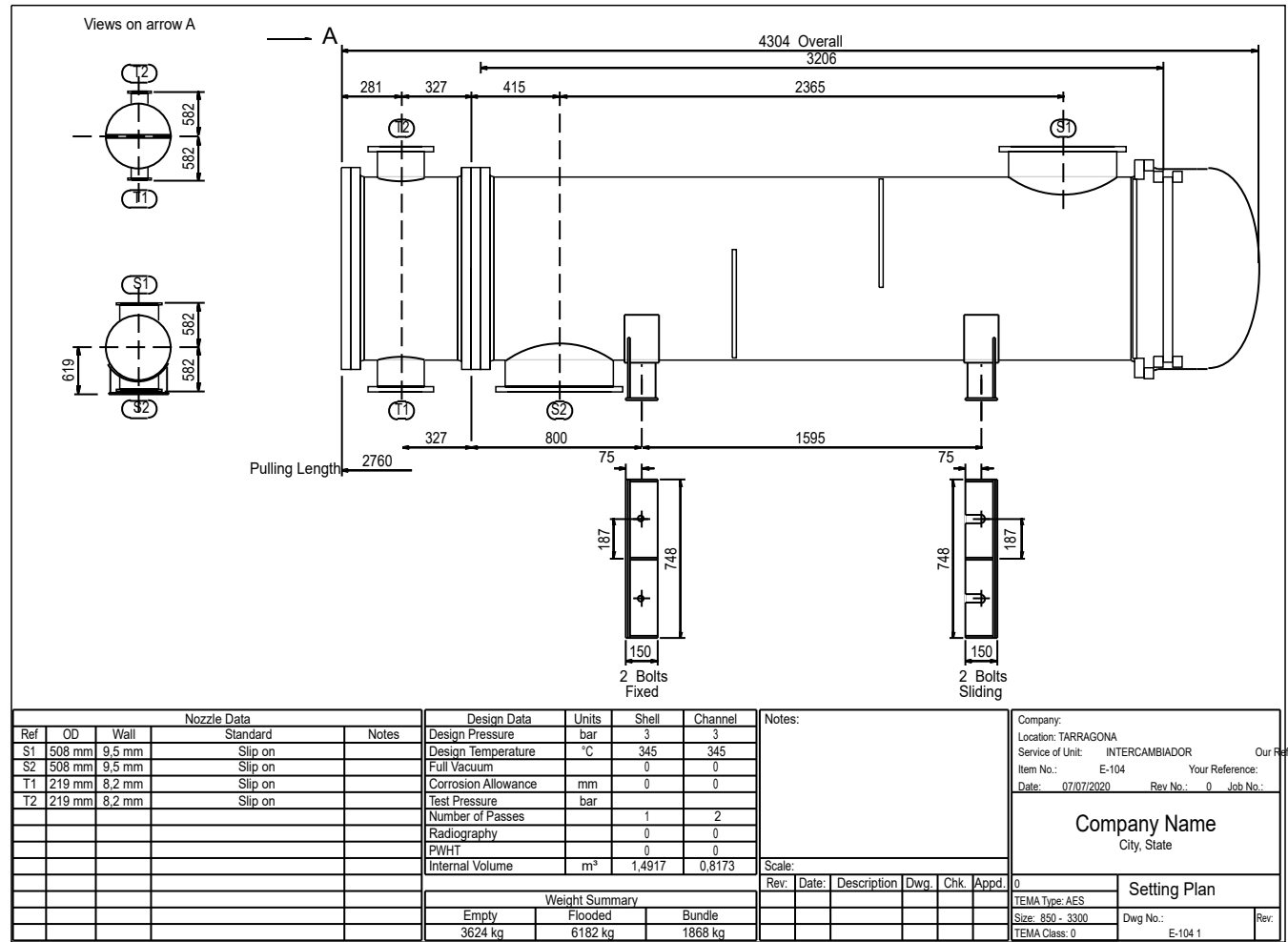
Heat Exchanger Specification Sheet

1	Company:									
2	Location: TARRAGONA									
3	Service of Unit: INTERCAMBIADOR					Our Reference:				
4	Item No.: E-104					Your Reference:				
5	Date: 07/07/2020		Rev No.: 0		Job No.:					
6	Size: 850 - 3300 mm		Type: AES Horizontal		Connected in: 2 parallel		1 series			
7	Surf/unit(eff.) 218 m ²		Shells/unit 2		Surf/shell(eff.) 109 m ²					
8	PERFORMANCE OF ONE UNIT									
9	Fluid allocation		Shell Side				Tube Side			
10	Fluid name		9				15			
11	Fluid quantity, Total		kg/s		14,9938		113,293			
12	Vapor (In/Out)		kg/s		14,9938		14,7765		0,0003 / 0,0017	
13	Liquid		kg/s		0		0,2173		113,2927 / 113,2913	
14	Noncondensable		kg/s		0		0		0 / 0	
15										
16	Temperature (In/Out)		°C		310		94,37		76,83 / 87,3	
17	Bubble / Dew point		°C		-14,08 / 96,87		-15,95 / 94,9		76,47 / 622,73 / 76,11 / 621,84	
18	Density Vapor/Liquid		kg/m ³		0,93 /		1,39 / 921,75		/ 939,66 / 1,64 / 928,78	
19	Viscosity		mPa-s		0,0265 /		0,0177 / 0,2997		/ 0,37 / 0,0171 / 0,3234	
20	Molecular wt, Vap				25		25,12		28,43	
21	Molecular wt, NC									
22	Specific heat		kJ/(kg-K)		1,503 /		1,379 / 4,232		/ 4,303 / 1,327 / 4,358	
23	Thermal conductivity		W/(m-K)		0,0443 /		0,0261 / 0,4293		/ 0,5789 / 0,0247 / 0,5798	
24	Latent heat		kJ/kg		2144,6		2151		1357,7 / 1350,1	
25	Pressure (abs)		bar		1,8		1,6743		1,8 / 1,71215	
26	Velocity (Mean/Max)		m/s		30,31 / 43,26				1,05 / 1,1	
27	Pressure drop, allow./calc.		bar		0,18		0,1257		0,36 / 0,08785	
28	Fouling resistance (min)		m ² -K/W		0,0002				0,0002 / 0,00024 Ao based	
29	Heat exchanged		5135,7 kW		MTD (corrected)		51,47 °C			
30	Transfer rate, Service		457,7 Dirty		457,7 Clean		573,7 W/(m ² -K)			
31	CONSTRUCTION OF ONE SHELL									
32			Shell Side				Tube Side			
33	Design/Vacuum/test pressure		bar		3 /		3 /			
34	Design temperature / MDMT		°C		345 /		345 /			
35	Number passes per shell				1		2			
36	Corrosion allowance		mm		0		0			
37	Connections		In mm		1 488,95 / -		1 202,72 / -			
38	Size/Rating		Out		1 488,95 / -		1 202,72 / -			
39	ID		Intermediate		/ -		/ -			
40	Tube #: 594 OD: 19,05 Tks. Average 1,65 mm Length: 3300 mm Pitch: 25,4 mm Tube pattern: 90									
41	Tube type: Plain Insert: None Fin#: #/m Material: SS 316									
42	Shell SS 316		ID 850 OD 864 mm		Shell cover		SS 316			
43	Channel or bonnet		SS 316		Channel cover		SS 316			
44	Tubesheet-stationary		SS 316 -		Tubesheet-floating		SS 316			
45	Floating head cover		SS 316		Impingement protection		None			
46	Baffle-cross		SS 316 Type Single segmental Cut(%d) 40,48 HorizSpacing: c/c 685 mm							
47	Baffle-long		- Seal Type		Inlet		1190,71 mm			
48	Supports-tube		U-bend 0 Type							
49	Bypass seal		Tube-tubesheet joint Expanded only (2 grooves)(App.A 'i')							
50	Expansion joint		- Type None							
51	RhoV2-Inlet nozzle		1715 Bundle entrance 876 Bundle exit 612 kg/(m-s ²)							
52	Gaskets - Shell side		Flat Metal Jacket Fibe Tube side Flat Metal Jacket Fibe							
53	Floating head		Flat Metal Jacket Fibe							
54	Code requirements		ASME Code Sec VIII Div 1 TEMA class R - refinery service							
55	Weight/Shell		3623,8 Filled with water 6182,1 Bundle 1868 kg							
56	Remarks									
57										
58										



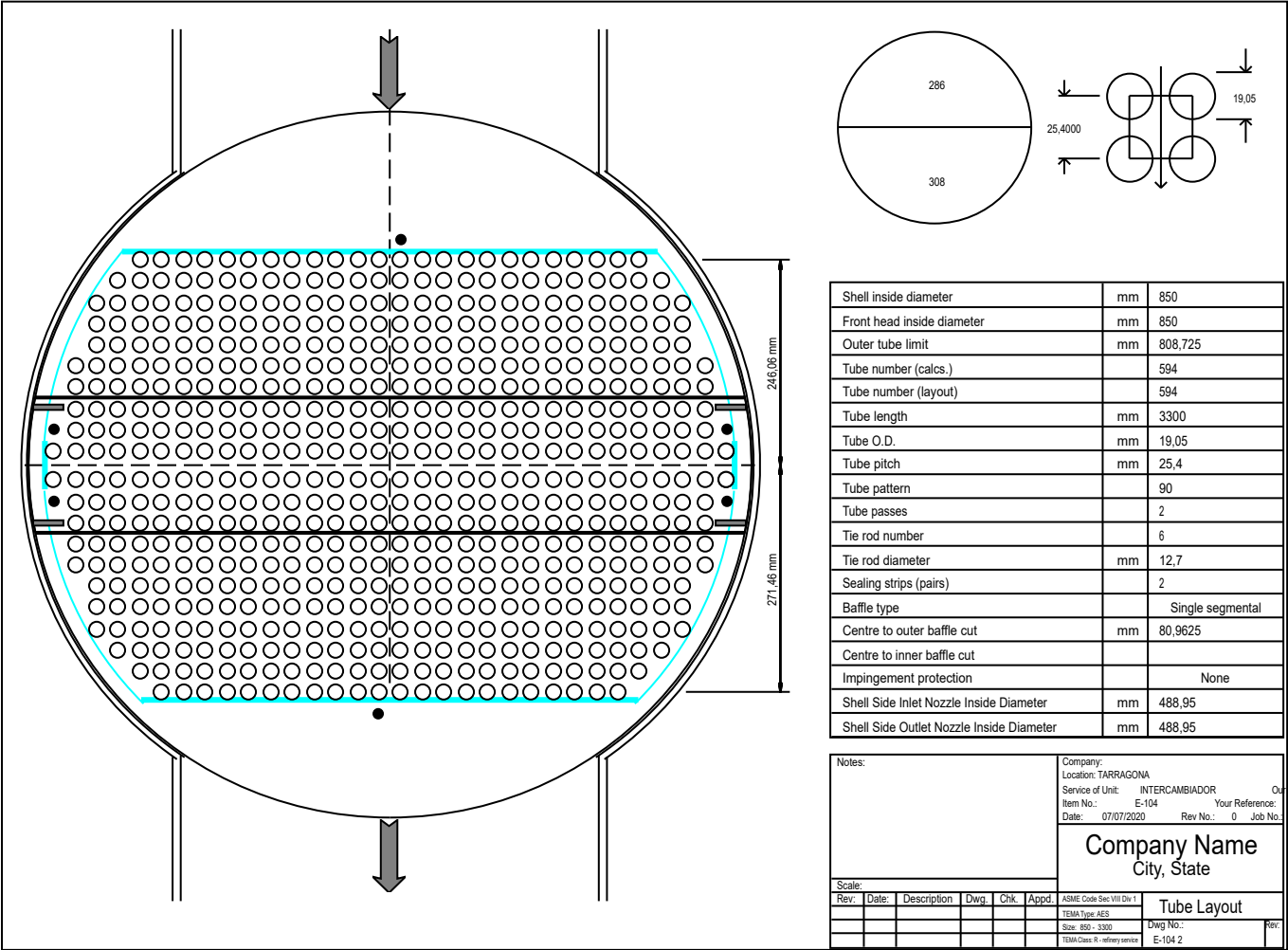
Aspen Exchanger Design and Rating Shell & Tube V11


Setting Plan




Aspen Exchanger Design and Rating Shell & Tube V11

Tubesheet Layout

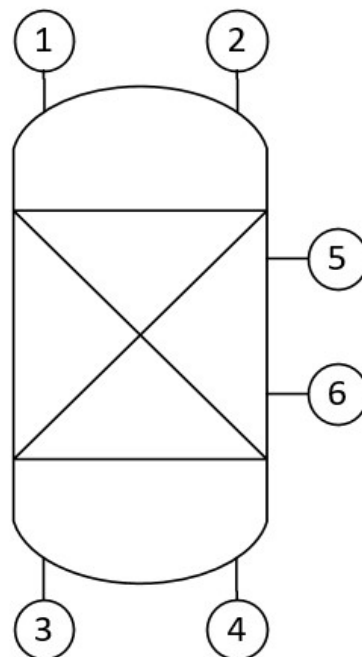


						COMPRESSOR PROCESS DATA SHEET					
REV.	0					JOB N°	2020				
DATE	04/07/2020					UNIT	PLANTA ACROLEÍNA				
BY	RPF					CLIENT					
APPR'V						LOCATION	TARRAGONA				
REV.											
1	ITEM NUMBER	C-101				QUANTITY	1				
2	SERVICE	COMPRESOR DE AIRE									
3	TYPE	PISTON				LUBRICATION (Yes/No)	SI				
4	OPERATION:Cont./Intermit.	CONTINUA				OPERATING	1	SPARE	0		
5	LOCATION (Indoors/Outdoors)	INTERIOR				ALTITUDE ABOVE SEA LEVEL	68	m			
6	ROOF COVERED (YES/NO)	NO				DRIVER (Motor/Turbine)					
7	ALTERNATIVE SERVICES	NO									
8	STREAM N°	3 Y 6									
9	TEMPERATURE	25									
10	PRESSURE barg	0,325									
11	SUCTION TEMPERATURE °c	25									
12	DISCHARGE TEMPERATUR °C	99									
13	DISCHARGE PRESSURE barG	0,78									
14	COMPRESSION RATIO	2,4									
15	N° OF STAGES	SIMPLE									
16	MASS FLOW kg/h	43385									
17	VOLUMETRIC FLOW (@ NC)	36797									
18	VOLUMETRIC FLOW (suction)	36797									
19	GAS COMPOSITION					UNITS					
20	Components					MW					
21	N2					28	79				
22	O2					32	21				
23											
24											
25											
26											
27											
28											
29	TOTAL										
30	Cp/Cv	1,4									
31	COMPRESSIBILITY FACTOR	1									
32											
33											
34	NOTES										
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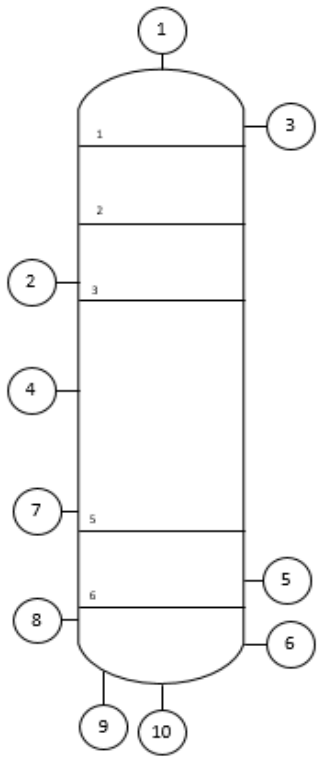
						<h1 style="text-align: center;">REACTOR PROCESS DATA SHEET</h1>	
Universidad de Valladolid							
REV.	0					JOB N°	2020
DATE	04-jul					UNIT	PLANTA PRODUCCIÓN DE ACROLEÍNA
BY	RPF					CLIENT	UVA
APPR'V						LOCATION	TARRAGONA
REV.							
1	Item Number: R-101 Quantity: 1						
2	Service: REACTOR MULTITUBULAR						
3	Fluid: MEZCLA DE REACCION						
4	N tubes 6573						
5	Dt 25 mm Lt 5000 mm						
6	Horizontal or Vertical HORIZONTAL						
7	Catalyst Bi2Mo3O12						
8	T 310 °c P 180 kPa						
9							
10							
11							
12							
13							
14							
15	MATERIAL CORR. ALLOW.						
16	Shell	CS				3,75 mm	
17	Heads	CS				3,75 mm	
18	Jacket	CS				(1) mm	
19	Coil					mm	
20	Demister						
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32	Radiograph						
33							
34	NOZZLES						
35	Mark N°	Quantity	Size	Service			
36	(1)						
37							
38							
39							
40							
41							
42						1 DEFINIR DURANTE INGENIERIA DE DISEÑO	
43							
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ABSORBER PROCESS DATA SHEET

REV.	0					JOB N°	2020
DATE	04-jul					UNIT	PLANTA PRODUCCIÓN DE ACROLEÍNA
BY	RPF					CLIENT	UVA
APPR'V						LOCATION	TARRAGONA

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[1] DEFINIR DURANTE LA FASE DE DETALLE

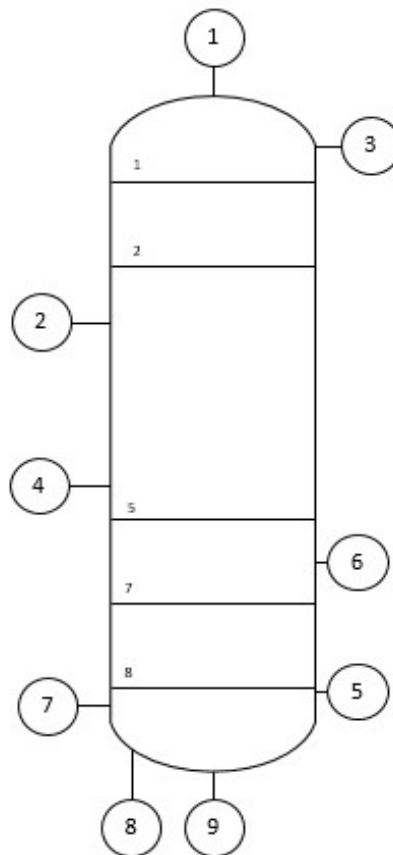
 Universidad de Valladolid						COLUMN PROCESS DATA SHEET	
REV.	0					JOB N°	2020
DATE	04-jul					UNIT	PLANTA PRODUCCIÓN DE ACROLEÍNA
BY	RPF					CLIENT	UVA
APPR'V						LOCATION	TARRAGONA
REV.							
1	Item Number: T-202		Quantity:				
2	Service: DESTILACIÓN 1						
3	Fluid: CORRIENTE LÍQUIDA DEL ABSORBEDOR						
4							
5	Diameter (ID)	3350 mm	Height (TL-TL)	3200 mm			
6	Horizontal or Vertical VERTICAL						
7							
8							
9							
10							
11							
12							
13							
14							
15		MATERIAL		CORR. ALLOW.			
16	Shell	CS		3,75 mm			
17	Heads	CS		3,75 mm			
18	Jacket			mm			
19	Coil			mm			
20	Demister	CS					
21							
22	Packed/trayed	Platos	Tray type		SIEVE		
23	Heads type	HEMIESFERICA					
24	No of stages	6					
25							
26							
27							
28							
29							
30							
31							
32	Radiograph						
33							
34	NOZZLES						
35	Mark N°	Quantity	Size	Service			
36	1	1	[1]	SALIDA HACIA CONDENSADOR			
37	2	1	[1]	ENTRADA ALIMENTACION PLATO 3			
38	3	1	[1]	ENTRADA REFLUJO			
39	4	1	[1]	TRANSMISOR DE PRESIÓN			
40	5	1	[1]	TRANSMISOR DE NIVEL			
41	6	1	[1]	TRANSMISOR DE TEMPERATURA			
42	7	1	[1]	[2]	NOTES		
43	8	1	[1]	RETORNO EVAPORADOR			
44	9	1	[1]	SALIDA HACIA EVAPORADOR			
45	10	1	[1]	SALIDA COLAS			
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
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COLUMN PROCESS DATA SHEET

REV.				
1	Item Number: T-203		Quantity:	
2	Service: DESTILACIÓN 2			
3	Fluid:			
4				
5	Diameter (ID) 925 mm		Height (TL-TL) 3650 mm	
6	Horizontal or Vertical VERTICAL			
7				
8				
9				
10				
11				
12				
13				
14				
15			MATERIAL	
16	Shell		CS	
17	Heads		CS	
18	Jacket			
19	Coil			
20	Demister		CS	
21				
22	Packed/trayed	Platos	Tray type	SIEVE
23	Heads type	HEMIESFERICA		
24	No of stages	8		
25				
26				
27				
28				
29				
30				
31				
32	Radiograph			
33				
34	NOZZLES			
35	Mark N°	Quantity	Size	Service
36	1	1	[1]	SALIDA HACIA CONDENSADOR
37	2	1	[1]	TRANSMISOR DE PRESIÓN
38	3	1	[1]	ENTRADA REFLUJO
39	4	1	[1]	ENTRADA ALIMENTACION PLATO 5
40	5	1	[1]	TRANSMISOR DE TEMPERATURA
41	6	1	[1]	TRANSMISOR DE NIVEL
42	7	1	[1]	RETORNO EVAPORADOR
43	8	1	[1]	SALIDA HACIA EVAPORADOR
44	9	1	[1]	SALIDA COLAS
45				
46				
47				
48				
49				
50				
51				
52				
53				
54				
55				
56				

NOTES

[1] DEFINIR DURANTE LA FASE DE DETALLE



ANEXO 5: HOJAS DE SEGURIDAD

PROPILENO**ICSC: 0559**

Metiletileno

Propeno

Metileteno

Noviembre 1998**CAS: 115-07-1****Nº ONU: 1077****CE: 204-062-1**

	PELIGROS	PREVENCIÓN	LUCHA CONTRA INCENDIOS
INCENDIO Y EXPLOSIÓN	Extremadamente inflamable. Las mezclas gas/aire son explosivas.	Evitar las llamas, NO producir chispas y NO fumar. Sistema cerrado, ventilación, equipo eléctrico y de alumbrado a prueba de explosión. Evitar la generación de cargas electrostáticas (p. ej., mediante conexión a tierra) si aparece en estado líquido.	Cortar el suministro; si no es posible y no existe riesgo para el entorno próximo, dejar que el incendio se extinga por sí mismo; en otros casos apagar con polvo, dióxido de carbono. En caso de incendio: mantener fría la botella rociando con agua. NO poner en contacto directo con agua. Combatir el incendio desde un lugar protegido.

	SÍNTOMAS	PREVENCIÓN	PRIMEROS AUXILIOS
Inhalación	Somnolencia. Asfixia. Ver Notas.	Usar ventilación.	Aire limpio, reposo. Puede ser necesaria respiración artificial. Proporcionar asistencia médica.
Piel	EN CONTACTO CON LÍQUIDO: CONGELACIÓN.	Guantes aislantes del frío.	EN CASO DE CONGELACIÓN: aclarar con agua abundante, NO quitar la ropa. Proporcionar asistencia médica.
Ojos	Ver Piel.	Utilizar gafas de protección de montura integral o pantalla facial.	Enjuagar con agua abundante durante varios minutos (quitar las lentes de contacto si puede hacerse con facilidad), después proporcionar asistencia médica.
Ingestión		No comer, ni beber, ni fumar durante el trabajo.	

DERRAMES Y FUGAS	CLASIFICACIÓN Y ETIQUETADO
¡Evacuar la zona de peligro! ¡Consultar a un experto! Ventilar. Eliminar toda fuente de ignición. NO verter NUNCA chorros de agua sobre el líquido. Protección personal: traje de protección química, incluyendo equipo autónomo de respiración.	Conforme a los criterios del GHS de la ONU
ALMACENAMIENTO	Transporte
A prueba de incendio. Fresco.	Clasificación ONU
ENVASADO	Clase de Peligro ONU: 2.1

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PROPILENO**ICSC: 0559****INFORMACIÓN FÍSICO-QUÍMICA****Estado físico; aspecto**

GAS INCOLORO COMPRIMIDO LICUADO.

Peligros físicos

El gas es más denso que el aire y puede extenderse a ras del suelo; posible ignición en punto distante. El gas es más denso que el aire y puede acumularse en las zonas más bajas produciendo una deficiencia de oxígeno. Como resultado del flujo, agitación, etc., se pueden generar cargas electrostáticas.

Peligros químicos

Reacciona violentamente con oxidantes. Esto genera peligro de incendio y explosión.

Fórmula: C₃H₆ / CH₂CHCH₃

Masa molecular: 42.1

Punto de ebullición: -48°C

Punto de fusión: -185°C

Densidad relativa (agua = 1): 0.5

Solubilidad en agua: escasa

Presión de vapor, kPa a 25°C: 1158

Densidad relativa de vapor (aire = 1): 1.5

Punto de inflamación: gas inflamable

Temperatura de autoignición: 460°C

Límites de explosividad, % en volumen en el aire: 2.4-10.3

Coeficiente de reparto octanol/agua como log Pow: 1.77

EXPOSICIÓN Y EFECTOS SOBRE LA SALUD**Vías de exposición**

La sustancia se puede absorber por inhalación.

Efectos de exposición de corta duración

La evaporación rápida del líquido puede producir congelación. La sustancia puede afectar al sistema nervioso central. La exposición podría causar disminución del estado de alerta. Ver Notas.

Riesgo de inhalación

Al producirse pérdidas en zonas confinadas, esta sustancia puede originar asfixia por disminución del contenido de oxígeno en el aire.

Efectos de exposición prolongada o repetida**LÍMITES DE EXPOSICIÓN LABORAL**

TLV: 500 ppm como TWA; A4 (no clasificado como cancerígeno humano)

MEDIO AMBIENTE**NOTAS**

Altas concentraciones en el aire producen una deficiencia de oxígeno con riesgo de pérdida de conocimiento o muerte.

Comprobar el contenido de oxígeno antes de entrar en la zona.

Con el fin de evitar la fuga de gas en estado líquido, girar la botella que tenga un escape manteniendo arriba el punto de escape.

INFORMACIÓN ADICIONAL

- Límites de exposición profesional (INSHT 2012):

VLA-ED: 500 ppm

- N° de índice (clasificación y etiquetado armonizados conforme al Reglamento CLP de la UE): 601-011-00-9

- **Clasificación UE**

Pictograma: F+; R: 12; S: (2)-9-16-33

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ACROLEÍNA 2-Propenal Acrilaldehído 2-Propen-1-al Aldehído acrílico	ICSC: 0090 Marzo 2001
CAS: 107-02-8 Nº ONU: 1092 CE: 203-453-4	

	PELIGROS	PREVENCIÓN	LUCHA CONTRA INCENDIOS
INCENDIO Y EXPLOSIÓN	Altamente inflamable. Las mezclas vapor/aire son explosivas. Riesgo de incendio y explosión en contacto con bases, ácidos u oxidantes fuertes.	Evitar las llamas, NO producir chispas y NO fumar. Sistema cerrado, ventilación, equipo eléctrico y de alumbrado a prueba de explosión. Utilícense herramientas manuales no generadoras de chispas.	Usar espuma resistente al alcohol. Usar polvo. Usar dióxido de carbono. En caso de incendio: mantener fríos los bidones y demás instalaciones rociando con agua. Combatir el incendio desde un lugar protegido.

¡HIGIENE ESTRICTA! ¡CONSULTAR AL MÉDICO EN TODOS LOS CASOS!			
	SÍNTOMAS	PREVENCIÓN	PRIMEROS AUXILIOS
Inhalación	Sensación de quemazón. Tos. Dificultad respiratoria. Jadeo. Dolor de garganta. Náuseas. Síntomas no inmediatos. Ver Notas.	Usar ventilación, extracción localizada o protección respiratoria.	Aire limpio, reposo. Posición de semiincorporado. Proporcionar asistencia médica.
Piel	Enrojecimiento. Dolor. Ampollas. Quemaduras cutáneas.	Guantes de protección. Traje de protección.	Quitar las ropas contaminadas. Aclarar la piel con agua abundante o ducharse. Proporcionar asistencia médica.
Ojos	Enrojecimiento. Dolor. Quemaduras profundas graves.	Utilizar pantalla facial o protección ocular en combinación con protección respiratoria.	Enjuagar con agua abundante durante varios minutos (quitar las lentes de contacto si puede hacerse con facilidad), después proporcionar asistencia médica.
Ingestión	Sensación de quemazón en la garganta y el pecho. Convulsiones. Náuseas.	No comer, ni beber, ni fumar durante el trabajo. Lavarse las manos antes de comer.	Enjuagar la boca. NO provocar el vómito. Proporcionar asistencia médica.

DERRAMES Y FUGAS	CLASIFICACIÓN Y ETIQUETADO
¡Evacuar la zona de peligro! ¡Consultar a un experto! Protección personal: traje de protección química, incluyendo equipo autónomo de respiración. Eliminar toda fuente de ignición. NO permitir que este producto químico se incorpore al ambiente. Recoger, en la medida de lo posible, el líquido que se derrama y el ya derramado en recipientes tapados. Absorber el líquido residual en arena o absorbente inerte. A continuación, almacenar y eliminar el residuo conforme a la normativa local.	Conforme a los criterios del GHS de la ONU Transporte Clasificación ONU Clase de Peligro ONU: 6.1; Peligro Secundario ONU: 3; Grupo de Embalaje/Envase ONU: I
ALMACENAMIENTO	
A prueba de incendio. Separado de oxidantes fuertes, bases fuertes, ácidos fuertes y alimentos y piensos. Fresco. Ventilación a ras del suelo. Almacenar solamente si está estabilizado.	
ENVASADO	
Envase irrompible. Colocar el envase frágil dentro de un recipiente irrompible cerrado. No transportar con alimentos y piensos. Contaminante marino.	

ACROLEÍNA

ICSC: 0090

INFORMACIÓN FÍSICO-QUÍMICA

Estado físico; aspecto

LÍQUIDO DE AMARILLO A INCOLORO DE OLOR ACRE.

Peligros físicos

El vapor es más denso que el aire y puede extenderse a ras del suelo; posible ignición en punto distante.

Peligros químicos

La sustancia puede formar peróxidos explosivos. La sustancia puede polimerizar. Esto genera peligro de incendio o explosión. Se descompone por calentamiento. Por calentamiento intenso se forman humos tóxicos. Esto produce humos tóxicos. Reacciona con ácidos fuertes, bases fuertes y oxidantes fuertes. Esto genera peligro de incendio y explosión.

Fórmula: $\text{CH}_2=\text{CHCHO}$

Masa molecular: 56.06

Punto de ebullición: 53°C

Punto de fusión: -88°C

Densidad relativa (agua = 1): 0.8

Solubilidad en agua, g/100ml a 20°C: 20

Presión de vapor, kPa a 20°C: 29

Densidad relativa de vapor (aire = 1): 1.9

Densidad relativa de la mezcla vapor/aire a 20°C (aire = 1): 1.2

Punto de inflamación: -26°C c.c.

Temperatura de autoignición: 234°C

Límites de explosividad, % en volumen en el aire: 2.8-31

Coeficiente de reparto octanol/agua como log Pow: 0.9

EXPOSICIÓN Y EFECTOS SOBRE LA SALUD

Vías de exposición

La sustancia se puede absorber por inhalación del vapor, a través de la piel y por ingestión.

Efectos de exposición de corta duración

Lagrimo. La sustancia irrita gravemente los ojos, la piel y el tracto respiratorio. La inhalación de concentraciones altas puede causar edema pulmonar. Ver Notas. Los efectos pueden aparecer de forma no inmediata. Se recomienda vigilancia médica.

Riesgo de inhalación

Por evaporación de esta sustancia a 20°C se puede alcanzar muy rápidamente una concentración nociva en el aire.

Efectos de exposición prolongada o repetida

LÍMITES DE EXPOSICIÓN LABORAL

TLV: 0.1 ppm como TWA; (valor techo): (piel); A4 (no clasificado como cancerígeno humano).

MAK: cancerígeno: categoría 3B.

EU-OEL: 0.05 mg/m³, 0.02 ppm como TWA; 0.12 mg/m³, 0.05 ppm como STEL

MEDIO AMBIENTE

La sustancia es muy tóxica para los organismos acuáticos.

NOTAS

Los síntomas del edema pulmonar no se ponen de manifiesto, a menudo, hasta pasadas algunas horas y se agravan por el esfuerzo físico.

Reposo y vigilancia médica son, por ello, imprescindibles.

Debería considerarse la inmediata administración de una terapia por inhalación adecuada por un médico o persona por él autorizada.

La adición de estabilizantes o inhibidores puede influir sobre las propiedades toxicológicas de esta sustancia; consultar a un experto.

La alerta por el olor cuando se supera el límite de exposición es insuficiente.

El valor límite de exposición laboral aplicable no debe ser superado en ningún momento por la exposición en el trabajo.

Antes de la destilación comprobar si existen peróxidos; en caso positivo, eliminarlos.

INFORMACIÓN ADICIONAL

- Límites de exposición profesional (INSST 2019):

VLA-ED: 0,02 ppm; 0,05 mg/m³

VLA-EC: 0,05 ppm; 0,12 mg/m³

- N° de índice (clasificación y etiquetado armonizados conforme al Reglamento CLP de la UE): 605-008-00-3

- **Clasificación UE**

Pictograma: F, T+, N; R: 11-24/25-26-34-50; S: 23-26-28-36/37/39-45-61; Nota: D



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HIDROQUINONA

1,4-Dihidroxibenceno
Hidroquinol
1,4-Bencenodiol

ICSC: 0166**Octubre 2001****CAS: 123-31-9****Nº ONU: 2662****CE: 204-617-8**

	PELIGROS	PREVENCIÓN	LUCHA CONTRA INCENDIOS
INCENDIO Y EXPLOSIÓN	Combustible. Las partículas finamente dispersas forman mezclas explosivas en el aire.	Evitar las llamas. Sistema cerrado, equipo eléctrico y de alumbrado a prueba de explosión de polvo. Evitar el depósito del polvo.	Usar agua pulverizada, polvo, espuma, dióxido de carbono.

¡EVITAR LA DISPERSIÓN DEL POLVO! ¡EVITAR TODO CONTACTO!

	SÍNTOMAS	PREVENCIÓN	PRIMEROS AUXILIOS
Inhalación	Tos. Dificultad respiratoria.	Usar extracción localizada o protección respiratoria.	Aire limpio, reposo. Puede ser necesaria respiración artificial. Proporcionar asistencia médica.
Piel	Enrojecimiento.	Guantes de protección. Traje de protección.	Quitar las ropas contaminadas. Aclarar y lavar la piel con agua y jabón.
Ojos	Enrojecimiento. Dolor. Visión borrosa.	Utilizar gafas de protección de montura integral.	Enjuagar con agua abundante durante varios minutos (quitar las lentes de contacto si puede hacerse con facilidad), después proporcionar asistencia médica.
Ingestión	Vértigo. Dolor de cabeza. Náuseas. Jadeo. Convulsiones. Vómitos. Zumbidos auditivos.	No comer, ni beber, ni fumar durante el trabajo. Lavarse las manos antes de comer.	Enjuagar la boca. Provocar el vómito (¡ÚNICAMENTE EN PERSONAS CONSCIENTES!). Proporcionar asistencia médica.

DERRAMES Y FUGAS	CLASIFICACIÓN Y ETIQUETADO
Protección personal: respirador con filtro para partículas adaptado a la concentración de la sustancia en aire. NO permitir que este producto químico se incorpore al ambiente. Barrer la sustancia derramada e introducirla en un recipiente precintable tapado. Recoger cuidadosamente el residuo. A continuación, almacenar y eliminar el residuo conforme a la normativa local.	Conforme a los criterios del GHS de la ONU Transporte Clasificación ONU Clase de Peligro ONU: 6.1; Grupo de Embalaje/Envase ONU: III
ALMACENAMIENTO	
Separado de bases fuertes y alimentos y piensos.	
ENVASADO	
No transportar con alimentos y piensos.	



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HIDROQUINONA**ICSC: 0166****INFORMACIÓN FÍSICO-QUÍMICA****Estado físico; aspecto**

CRISTALES INCOLOROS.

Peligros físicos

Es posible la explosión del polvo si se encuentra mezclado con el aire en forma pulverulenta o granular.

Peligros químicos

Reacciona violentamente con hidróxido de sodio.

Fórmula: $C_6H_6O_2$ / $C_6H_4(OH)_2$

Masa molecular: 110.1

Punto de ebullición: 287°C

Punto de fusión: 172°C

Densidad relativa (agua = 1): 1.3

Solubilidad en agua, g/100ml a 15°C: 5.9

Presión de vapor, Pa a 20°C: 0.12

Densidad relativa de vapor (aire = 1): 3.8

Densidad relativa de la mezcla vapor/aire a 20°C (aire = 1): 1

Punto de inflamación: 165°C

Temperatura de autoignición: 515°C

Coeficiente de reparto octanol/agua como log Pow: 0.59

EXPOSICIÓN Y EFECTOS SOBRE LA SALUD**Vías de exposición**

La sustancia se puede absorber por inhalación, a través de la piel y por ingestión.

Efectos de exposición de corta duración

La sustancia irrita gravemente los ojos. La sustancia irrita la piel y el tracto respiratorio.

Riesgo de inhalación

Por evaporación de esta sustancia a 20°C no se alcanza, o se alcanza sólo muy lentamente, una concentración nociva en el aire.

Efectos de exposición prolongada o repetida

El contacto prolongado o repetido con la piel puede producir dermatitis. El contacto prolongado o repetido puede producir sensibilización de la piel. La sustancia puede afectar a los ojos y a la piel. Esto puede dar lugar a decoloración de la conjuntiva y la córnea y despigmentación de la piel. Esta sustancia es posiblemente carcinógena para los seres humanos.

LÍMITES DE EXPOSICIÓN LABORALTLV: 1 mg/m³, como TWA; (SEN); A3 (cancerígeno animal).

MAK: absorción dérmica (H); sensibilización cutánea (SH); cancerígeno: categoría 2; mutágeno: categoría 3A

MEDIO AMBIENTE

La sustancia es muy tóxica para los organismos acuáticos.

NOTAS

Está indicado un examen médico periódico dependiendo del grado de exposición.

A concentraciones tóxicas no hay alerta por el olor.

INFORMACIÓN ADICIONAL

- Límites de exposición profesional (INSHT 2012):

VLA-ED: 2 mg/m³

Notas: sensibilizante.

- N° de índice (clasificación y etiquetado armonizados conforme al Reglamento CLP de la UE): 604-005-00-4

- **Clasificación UE**

Pictograma: Xn, N; R: 22-40-41-43-50-68; S: (2)-26-36/37/39-61

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ÁCIDO ACRÍLICO

ICSC: 0688

Ácido etilencarboxílico

Ácido acroleico

Ácido 2-propenoico

Abril 2013


CAS: 79-10-7

Nº ONU: 2218 (estabilizado)

CE: 201-177-9

	PELIGROS	PREVENCIÓN	LUCHA CONTRA INCENDIOS
INCENDIO Y EXPLOSIÓN	Inflamable. Muchas reacciones pueden producir incendio o explosión. En caso de incendio se desprenden humos (o gases) tóxicos e irritantes. Por encima de 48°C pueden formarse mezclas explosivas vapor/aire.	Evitar las llamas, NO producir chispas y NO fumar. Por encima de 48°C, sistema cerrado, ventilación y equipo eléctrico a prueba de explosión. Los vapores no están inhibidos y pueden polimerizar en las instalaciones de extracción o ventilación, con riesgo de avería.	Usar agua pulverizada, espuma resistente al alcohol, polvo, dióxido de carbono. En caso de incendio: mantener fríos los bidones y demás instalaciones rociando con agua. Combatir el incendio desde un lugar protegido.

¡HIGIENE ESTRICTA!			
	SÍNTOMAS	PREVENCIÓN	PRIMEROS AUXILIOS
Inhalación	Tos. Dolor de garganta. Sensación de quemazón. Jadeo. Dificultad respiratoria.	Usar ventilación, extracción localizada o protección respiratoria.	Aire limpio, reposo. Posición de semiincorporado. Proporcionar asistencia médica.
Piel	¡PUEDE ABSORBERSE! Enrojecimiento. Dolor. Quemaduras cutáneas graves.	Guantes de protección. Traje de protección.	Quitar las ropas contaminadas. Aclarar la piel con agua abundante o ducharse. Proporcionar asistencia médica.
Ojos	Enrojecimiento. Dolor. Daño corneal.	Utilizar pantalla facial o protección ocular en combinación con protección respiratoria.	Enjuagar con agua abundante durante varios minutos (quitar las lentes de contacto si puede hacerse con facilidad), después proporcionar asistencia médica.
Ingestión	Sensación de quemazón. Diarrea. Shock o colapso. Pérdida del conocimiento.	No comer, ni beber, ni fumar durante el trabajo.	Enjuagar la boca. NO provocar el vómito. Proporcionar asistencia médica inmediatamente.

DERRAMES Y FUGAS	CLASIFICACIÓN Y ETIQUETADO
¡Evacuar la zona de peligro! ¡Consultar a un experto! Protección personal: traje de protección completo incluyendo equipo autónomo de respiración. Ventilar. NO permitir que este producto químico se incorpore al ambiente. Recoger el líquido procedente de la fuga en recipientes precintables. Absorber el líquido residual en arena o absorbente inerte. A continuación, almacenar y eliminar el residuo conforme a la normativa local.	<p>Conforme a los criterios del GHS de la ONU</p> <div style="text-align: center;">  </div> <p>PELIGRO</p> <p>Líquido y vapores inflamables Tóxico en caso de ingestión, en contacto con la piel o si se inhala Provoca graves quemaduras en la piel y lesiones oculares Puede irritar las vías respiratorias Nocivo para los organismos acuáticos</p> <p>Transporte Clasificación ONU Clase de Peligro ONU: 8; Peligro Secundario ONU: 3; Grupo de Embalaje/Envase ONU: II</p>
ALMACENAMIENTO	
A prueba de incendio. Separado de oxidantes fuertes, bases fuertes, ácidos fuertes y alimentos y piensos. Mantener en la oscuridad. Almacenar solamente si está estabilizado. Almacenar en un área sin acceso a desagües o alcantarillas. Las condiciones de almacenamiento pueden variar en función del tipo de inhibidor utilizado. Consultar en las instrucciones del fabricante las condiciones adecuadas de almacenamiento. Ver Notas.	
ENVASADO	
No transportar con alimentos y piensos. Solo puede almacenarse en recipientes de vidrio, acero inoxidable, aluminio o recubiertos con polietileno.	

ÁCIDO ACRÍLICO**ICSC: 0688****INFORMACIÓN FÍSICO-QUÍMICA****Estado físico; aspecto**

LÍQUIDO INCOLORO DE OLORES ACRES.

Peligros físicos

Los vapores no están inhibidos y pueden polimerizar en los venteos o apagalmas y bloquearlos.

Peligros químicos

La sustancia polimeriza fácilmente por calentamiento intenso, bajo la influencia de la luz, oxígeno, oxidantes tales como peróxidos u otros activadores (ácido, sales de hierro). Esto genera peligro de incendio o explosión. Se descompone por calentamiento. Esto produce humos tóxicos. La sustancia es moderadamente ácida. Reacciona violentamente con bases fuertes y aminas. Ataca muchos metales incluyendo níquel y cobre.

Fórmula: $C_3H_4O_2$ / $CH_2=CHCOOH$

Masa molecular: 72.07

Punto de ebullición: 141°C

Punto de fusión: 14°C

Densidad relativa (agua = 1): 1.05

Solubilidad en agua: miscible

Presión de vapor, Pa a 20°C: 413

Densidad relativa de vapor (aire = 1): 2.5

Punto de inflamación: 48-55°C c.c.

Temperatura de autoignición: 395°C

Límites de explosividad, % en volumen en el aire: 3.9-19.8

Coeficiente de reparto octanol/agua como log Pow: 0.36 (estimado)

Densidad relativa de la mezcla vapor/aire a 20°C (aire = 1): 1.01

EXPOSICIÓN Y EFECTOS SOBRE LA SALUD**Vías de exposición**

La sustancia se puede absorber por inhalación, a través de la piel y por ingestión.

Efectos de exposición de corta duración

La sustancia es corrosiva para los ojos y la piel. Corrosivo por ingestión. El vapor irrita gravemente los ojos y el tracto respiratorio.

Riesgo de inhalación

Por evaporación de esta sustancia a 20°C se puede alcanzar bastante rápidamente una concentración nociva en el aire, más rápidamente por pulverización o cuando se dispersa.

Efectos de exposición prolongada o repetida

El contacto prolongado o repetido con la piel puede producir dermatitis. La sustancia puede afectar al tracto respiratorio superior y a los pulmones. Esto puede dar lugar a función pulmonar reducida e hiperreactividad de las vías aéreas. Ver Notas.

LÍMITES DE EXPOSICIÓN LABORAL

TLV: 2 ppm como TWA; (piel); A4 (no clasificado como cancerígeno humano).

MAK: 30 mg/m³, 10 ppm; categoría de limitación de pico: I(1); riesgo para el embarazo: grupo C.EU-OEL: 29 mg/m³, 10 ppm como TWA; 59 mg/m³, 20 ppm como STEL**MEDIO AMBIENTE**

La sustancia es nociva para los organismos acuáticos.

NOTAS

El ácido acrílico se comercializa estabilizado mediante la adición de inhibidores de la polimerización (ver Peligros Químicos). El ácido acrílico se solidifica por debajo de 14°C causando una disminución localizada del estabilizante. Seguir las instrucciones del fabricante para descongelar.

La adición de estabilizantes o inhibidores puede influir sobre las propiedades toxicológicas de esta sustancia; consultar a un experto.

Debería considerarse la inmediata administración de una terapia por inhalación adecuada por un médico o persona por él autorizada.

Nadie que haya mostrado signos de sensibilización a esta sustancia debería entrar nunca más en contacto con esta sustancia u otros acrilatos.

INFORMACIÓN ADICIONAL

- Límites de exposición profesional (INSST 2019):

VLA-ED: 10 ppm; 29 mg/m³VLA-EC: 20 ppm; 59 mg/m³

Notas: vía dérmica.

- N° de índice (clasificación y etiquetado armonizados conforme al Reglamento CLP de la UE): 607-061-00-8

- **Clasificación UE**

Pictograma: C, N; R: 10-20/21/22-35-50; S: (1/2)-26-36/37/39-45-61; Nota: D

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DIÓXIDO DE CARBONO**ICSC: 0021**Gas carbónico
Anhídrido carbónico**Octubre 2006****CAS: 124-38-9****Nº ONU: 1013****CE: 204-696-9**

	PELIGROS	PREVENCIÓN	LUCHA CONTRA INCENDIOS
INCENDIO Y EXPLOSIÓN	No combustible.		En caso de incendio en el entorno: usar un medio de extinción adecuado. En caso de incendio: mantener fría la botella rociando con agua. Combatir el incendio desde un lugar protegido.

	SÍNTOMAS	PREVENCIÓN	PRIMEROS AUXILIOS
Inhalación	Vértigo. Dolor de cabeza. Presión sanguínea elevada. Ritmo cardíaco acelerado. Asfixia. Pérdida del conocimiento.	Usar ventilación.	Aire limpio, reposo. Puede ser necesaria respiración artificial. Proporcionar asistencia médica.
Piel	EN CONTACTO CON GAS O HIELO SECO: CONGELACIÓN.	Guantes aislantes del frío.	EN CASO DE CONGELACIÓN: aclarar con agua abundante, NO quitar la ropa. Proporcionar asistencia médica.
Ojos		Utilizar gafas de protección.	
Ingestión			

DERRAMES Y FUGAS	CLASIFICACIÓN Y ETIQUETADO
Protección personal: equipo autónomo de respiración. Ventilar. No utilizar agua.	Conforme a los criterios del GHS de la ONU  ATENCIÓN Contiene gas refrigerado; puede provocar quemaduras o lesiones criogénicas Puede ser nocivo si se inhala Transporte Clasificación ONU Clase de Peligro ONU: 2.2
ALMACENAMIENTO	
A prueba de incendio, si está en local cerrado. Fresco. Ventilación a ras del suelo.	
ENVASADO	

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DIÓXIDO DE CARBONO**ICSC: 0021****INFORMACIÓN FÍSICO-QUÍMICA****Estado físico; aspecto**

GAS INODORO INCOLORO COMPRIMIDO LICUADO.

Peligros físicos

El gas es más denso que el aire y puede acumularse en las zonas más bajas produciendo una deficiencia de oxígeno. Las pérdidas de líquido condensan formando hielo seco extremadamente frío.

Peligros químicos

Se descompone por encima de 2000°C. Esto produce monóxido de carbono tóxico.

Fórmula: CO₂

Masa molecular: 44.0

Punto de sublimación: -79°C

Solubilidad en agua, ml/100ml a 20°C: 88

Presión de vapor, kPa a 20°C: 5720

Densidad relativa de vapor (aire = 1): 1.5

Coeficiente de reparto octanol/agua como log Pow: 0.83

EXPOSICIÓN Y EFECTOS SOBRE LA SALUD**Vías de exposición**

La sustancia se puede absorber por inhalación.

Efectos de exposición de corta duración

La evaporación rápida del líquido puede producir congelación. La inhalación de concentraciones altas puede causar pérdida del conocimiento. Asfixia.

Riesgo de inhalación

Al producirse pérdidas en zonas confinadas, esta sustancia puede originar riesgo grave de asfixia.

Efectos de exposición prolongada o repetida

La sustancia puede afectar al metabolismo.

LÍMITES DE EXPOSICIÓN LABORAL

TLV: 5000 ppm como TWA; 30000 ppm como STEL.

MAK: 9100 mg/m³, 5000 ppm; categoría de limitación de pico: II(2).

EU-OEL: 9000 mg/m³, 5000 ppm como TWA

MEDIO AMBIENTE**NOTAS**

El dióxido de carbono se libera en muchos procesos de fermentación (vino, cerveza, etc.) y es un componente mayoritario en los gases de combustión.

Altas concentraciones en el aire producen una deficiencia de oxígeno con riesgo de pérdida de conocimiento o muerte.

Comprobar el contenido de oxígeno antes de entrar en la zona.

A concentraciones tóxicas no hay alerta por el olor.

Otros números ONU: ONU 1845 dióxido de carbono, sólido (Hielo seco); ONU 2187 dióxido de carbono líquido refrigerado.

INFORMACIÓN ADICIONAL

- Límites de exposición profesional (INSHT 2011):

VLA-ED: 5000 ppm; 9150 mg/m³

- **Clasificación UE**

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FORMALDEHÍDO Metanal Metilaldehído Óxido de metileno Oximetileno	ICSC: 0275 Junio 2012
CAS: 50-00-0 Nº ONU: (ver Notas) CE: 200-001-8	

	PELIGROS	PREVENCIÓN	LUCHA CONTRA INCENDIOS
INCENDIO Y EXPLOSIÓN	Extremadamente inflamable. Las mezclas gas/aire son explosivas. Riesgo de explosión en contacto con oxidantes fuertes, ácidos fuertes o bases fuertes.	Evitar las llamas, NO producir chispas y NO fumar. Sistema cerrado, ventilación, equipo eléctrico y de alumbrado a prueba de explosión. NO poner en contacto con materiales incompatibles: ver Peligros Químicos.	Cortar el suministro; si no es posible y no existe riesgo para el entorno próximo, dejar que el incendio se extinga por sí mismo; en otros casos apagar con polvo, dióxido de carbono. En caso de incendio: mantener fríos los bidones y demás instalaciones rociando con agua.

¡EVITAR TODO CONTACTO!			
	SÍNTOMAS	PREVENCIÓN	PRIMEROS AUXILIOS
Inhalación	Tos. Dolor de garganta. Sensación de quemazón detrás del esternón. Dolor de cabeza. Jadeo.	Usar ventilación, extracción localizada o protección respiratoria.	Aire limpio, reposo. Posición de semiincorporado. Puede ser necesaria respiración artificial. Proporcionar asistencia médica inmediatamente.
Piel	Enrojecimiento.	Guantes de protección.	Quitar las ropas contaminadas. Aclarar la piel con agua abundante o ducharse. Buscar asistencia médica si se siente mal.
Ojos	Lagrimo. Enrojecimiento. Dolor. Visión borrosa.	Utilizar gafas de protección de montura integral o protección ocular en combinación con protección respiratoria.	Enjuagar con agua abundante (quitar las lentes de contacto si puede hacerse con facilidad). Proporcionar asistencia médica inmediatamente.
Ingestión			

DERRAMES Y FUGAS	CLASIFICACIÓN Y ETIQUETADO
¡Evacuar la zona de peligro! ¡Consultar a un experto! Protección personal: traje hermético de protección química, incluyendo equipo autónomo de respiración. Eliminar toda fuente de ignición. Cortar el gas si es posible. Eliminar el gas con agua pulverizada.	Conforme a los criterios del GHS de la ONU  PELIGRO Gas extremadamente inflamable Mortal si se inhala Provoca irritación ocular grave Puede provocar cáncer si se inhala Puede provocar una reacción cutánea alérgica Puede irritar las vías respiratorias Transporte Clasificación ONU
ALMACENAMIENTO	
A prueba de incendio. Fresco. Separado de materiales incompatibles. Ver Peligros Químicos.	
ENVASADO	

FORMALDEHÍDO

ICSC: 0275

INFORMACIÓN FÍSICO-QUÍMICA

Estado físico; aspecto

GAS INCOLORO DE OLOR ACRE.

Peligros físicos

El gas se mezcla bien con el aire, formándose fácilmente mezclas explosivas.

Peligros químicos

La sustancia polimeriza en contacto con álcalis y si se disuelve en agua. Por calentamiento intenso se forman humos tóxicos. Reacciona violentamente con oxidantes fuertes, ácidos fuertes y bases fuertes. Esto genera peligro de explosión.

Fórmula: H_2CO

Masa molecular: 30.0

Punto de ebullición: $-20^{\circ}C$ Punto de fusión: $-92^{\circ}C$

Densidad relativa (agua = 1): 0.8

Solubilidad en agua: muy elevada

Densidad relativa de vapor (aire = 1): 1.08

Temperatura de autoignición: $430^{\circ}C$

Límites de explosividad, % en volumen en el aire: 7-73

Coeficiente de reparto octanol/agua como log Pow: 0,35

EXPOSICIÓN Y EFECTOS SOBRE LA SALUD

Vías de exposición

La sustancia se puede absorber por inhalación.

Efectos de exposición de corta duración

La sustancia irrita gravemente los ojos y el tracto respiratorio. La inhalación de altas concentraciones puede causar edema pulmonar, pero sólo tras producirse los efectos corrosivos iniciales en los ojos y el tracto respiratorio superior.

Riesgo de inhalación

Al producirse una pérdida de gas, se alcanzará muy rápidamente una concentración nociva del mismo en el aire.

Efectos de exposición prolongada o repetida

La inhalación crónica o repetida del vapor puede causar inflamación crónica del tracto respiratorio superior. El contacto prolongado o repetido puede producir sensibilización de la piel. Esta sustancia es carcinógena para los seres humanos.

LÍMITES DE EXPOSICIÓN LABORAL

TLV: 0.1 ppm como TWA; 0.3 ppm como STEL; (SEN); A1 (cancerígeno humano confirmado).

MAK: 0.37 mg/m^3 , 0.3 ppm; categoría de limitación de pico: I(2); cancerígeno: categoría 4; riesgo para el embarazo: grupo C; mutágeno: categoría 5; sensibilización cutánea (SH).

EU-OEL: 0,37 mg/m^3 , 0,3 ppm como TWA; 0,74 mg/m^3 , 0,6 ppm como STEL; (sensibilización cutánea); (ver Notas)

MEDIO AMBIENTE

NOTAS

Debería considerarse la inmediata administración de una terapia por inhalación adecuada por un médico o persona por él autorizada.

No se indica el número ONU debido a que el formaldehído no se transporta como gas. Se transporta habitualmente en solución. Ver FISQ 0695.

Limit value for EU-OEL of 0,62 mg/m^3 or 0,5 ppm for the health care, funeral and embalming sectors until 11 July 2024.

INFORMACIÓN ADICIONAL

- Límites de exposición profesional (INSST 2019):

VLA-ED: 0,3 ppm; 0,37 mg/m^3 VLA-EC: 0,6 ppm; 0,74 mg/m^3

C1B (Sustancia carcinogénica de categoría 1B).

Notas: sensibilizante. Esta sustancia tiene prohibida total o parcialmente su comercialización y uso como fitosanitario y/o biocida.

- Clasificación UE

Pictograma: T; R: 23/24/25-34-40-43; S: (1/2)-26-36/37/39-45-51

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ÁCIDO ACÉTICO**ICSC: 0363**


Ácido acético glacial
Ácido etanoico
Ácido etílico
Ácido metanocarboxílico

Mayo 2010**CAS: 64-19-7****N° ONU: 2789****CE: 200-580-7**

	PELIGROS	PREVENCIÓN	LUCHA CONTRA INCENDIOS
INCENDIO Y EXPLOSIÓN	Inflamable. Por encima de 39°C pueden formarse mezclas explosivas vapor/aire. Riesgo de incendio y explosión en contacto con oxidantes fuertes.	Evitar las llamas, NO producir chispas y NO fumar. Por encima de 39°C, sistema cerrado, ventilación y equipo eléctrico a prueba de explosión.	Usar polvo, espuma resistente al alcohol, agua pulverizada, dióxido de carbono. En caso de incendio: mantener fríos los bidones y demás instalaciones rociando con agua.

¡EVITAR TODO CONTACTO!

	SÍNTOMAS	PREVENCIÓN	PRIMEROS AUXILIOS
Inhalación	Dolor de garganta. Tos. Sensación de quemazón. Dolor de cabeza. Vértigo. Jadeo. Dificultad respiratoria.	Usar ventilación, extracción localizada o protección respiratoria.	Aire limpio, reposo. Posición de semiincorporado. Proporcionar asistencia médica inmediatamente.
Piel	Dolor. Enrojecimiento. Quemaduras cutáneas. Ampollas.	Guantes de protección. Traje de protección.	Quitar las ropas contaminadas. Aclarar y lavar la piel con agua y jabón. Aclarar la piel con agua abundante o ducharse durante 15 minutos como mínimo. Proporcionar asistencia médica inmediatamente.
Ojos	Enrojecimiento. Dolor. Quemaduras graves. Pérdida de visión.	Utilizar pantalla facial o protección ocular en combinación con protección respiratoria.	Enjuagar con agua abundante (quitar las lentes de contacto si puede hacerse con facilidad). Proporcionar asistencia médica inmediatamente.
Ingestión	Dolor de garganta. Sensación de quemazón. Dolor abdominal. Vómitos. Shock o colapso.	No comer, ni beber, ni fumar durante el trabajo.	Enjuagar la boca. NO provocar el vómito. En los primeros minutos tras la ingestión, se puede dar a beber un vaso pequeño de agua. Proporcionar asistencia médica inmediatamente.

DERRAMES Y FUGAS	CLASIFICACIÓN Y ETIQUETADO
Eliminar toda fuente de ignición. Protección personal: traje de protección química, incluyendo equipo autónomo de respiración. NO permitir que este producto químico se incorpore al ambiente. Recoger el líquido procedente de la fuga en recipientes precintables. Neutralizar con precaución el líquido derramado con carbonato sódico, solo bajo la responsabilidad de un experto.	<p>Conforme a los criterios del GHS de la ONU</p>  <p>PELIGRO</p> <p>Líquido y vapores inflamables Nocivo en contacto con la piel o si se inhala Puede ser nocivo en caso de ingestión Provoca graves quemaduras en la piel y lesiones oculares Puede irritar las vías respiratorias Provoca daños en el tracto respiratorio tras exposiciones prolongadas o repetidas si se inhala Nocivo para los organismos acuáticos</p> <p>Transporte Clasificación ONU Clase de Peligro ONU: 8; Peligro Secundario ONU: 3; Grupo de Embalaje/Envase ONU: II</p>
ALMACENAMIENTO	
A prueba de incendio. Separado de alimentos y piensos, oxidantes fuertes, ácidos fuertes y bases fuertes. Almacenar solamente en el recipiente original. Bien cerrado. Mantener en lugar bien ventilado. Almacenar en un área sin acceso a desagües o alcantarillas.	
ENVASADO	
No transportar con alimentos y piensos.	

La información original ha sido preparada en inglés por un grupo internacional de expertos en nombre de la OIT y la OMS, con la





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ÁCIDO ACÉTICO**ICSC: 0363****INFORMACIÓN FÍSICO-QUÍMICA****Estado físico; aspecto**

LÍQUIDO INCOLORO DE OLOR ACRE.

Peligros físicos

Sin datos.

Peligros químicos

La sustancia es un ácido débil. Reacciona violentamente con oxidantes fuertes. Esto genera peligro de incendio y explosión. Reacciona violentamente con bases fuertes, ácidos fuertes y muchos otros compuestos. Ataca algunas formas de plásticos, el caucho y revestimientos.

Fórmula: $C_2H_4O_2$ / CH_3COOH

Masa molecular: 60.1

Punto de ebullición: 118°C

Punto de fusión: 16.7°C

Densidad relativa (agua = 1): 1.05

Solubilidad en agua: miscible

Presión de vapor, kPa a 20°C: 1.5

Densidad relativa de vapor (aire = 1): 2.1

Densidad relativa de la mezcla vapor/aire a 20°C (aire = 1): 1.02

Punto de inflamación: 39°C c.c.

Temperatura de autoignición: 485°C

Límites de explosividad, % en volumen en el aire: 6.0-17

Coeficiente de reparto octanol/agua como log Pow: -0.17

EXPOSICIÓN Y EFECTOS SOBRE LA SALUD**Vías de exposición**

Hay efectos locales graves por todas las vías de exposición.

Efectos de exposición de corta duración

La sustancia es corrosiva para los ojos, la piel y el tracto respiratorio. Corrosivo por ingestión. La inhalación puede originar edema pulmonar, pero sólo tras producirse los efectos corrosivos iniciales en los ojos o las vías respiratorias.

Riesgo de inhalación

Por evaporación de esta sustancia a 20°C se puede alcanzar bastante rápidamente una concentración nociva en el aire.

Efectos de exposición prolongada o repetida

El contacto prolongado o repetido con la piel puede producir dermatitis. Los pulmones pueden resultar afectados por la exposición prolongada o repetida al aerosol de esta sustancia. Riesgo de erosión dental por la exposición prolongada o repetida al aerosol de esta sustancia.

LÍMITES DE EXPOSICIÓN LABORALEU-OEL: 25 mg/m³, 10 ppm como TWA; 50 mg/m³, 20 ppm como STEL.MAK: 25 mg/m³, 10 ppm; categoría de limitación de pico: I(2); riesgo para el embarazo: grupo C.

TLV: 10 ppm como TWA; 15 ppm como STEL

MEDIO AMBIENTE

La sustancia es nociva para los organismos acuáticos.

NOTAS

El número ONU 2789 corresponde al ácido acético, ácido acético glacial o disolución de ácido acético con más del 80% del ácido en peso.

Otro número ONU: 2790 disolución de ácido acético (entre el 10 y el 80% de ácido acético en peso); clase de peligro: 8, grupo de emb/env: II-III.

INFORMACIÓN ADICIONAL

- Límites de exposición profesional (INSST 2019):

VLA-ED: 10 ppm, 25 mg/m³VLA-EC: 20 ppm, 50 mg/m³

- N° de índice (clasificación y etiquetado armonizados conforme al Reglamento CLP de la UE): 607-002-00-6

- Clasificación UE

Pictograma: C; R: 10-35; S: (1/2)-23-26-45; Nota: B



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ACETALDEHÍDO**ICSC: 0009**

Aldehído acético

Etanal

Etilaldehído

Noviembre 2003**CAS: 75-07-0****Nº ONU: 1089****CE: 200-836-8**

	PELIGROS	PREVENCIÓN	LUCHA CONTRA INCENDIOS
INCENDIO Y EXPLOSIÓN	Extremadamente inflamable. Las mezclas vapor/aire son explosivas.	Evitar las llamas, NO producir chispas y NO fumar. NO poner en contacto con superficies calientes. Sistema cerrado, ventilación, equipo eléctrico y de alumbrado a prueba de explosión. NO utilizar aire comprimido para llenar, vaciar o manipular. Utilícense herramientas manuales no generadoras de chispas.	Usar agua en grandes cantidades, polvo, espuma resistente al alcohol, dióxido de carbono. En caso de incendio: mantener fríos los bidones y demás instalaciones rociando con agua.

¡EVITAR TODO CONTACTO!			
	SÍNTOMAS	PREVENCIÓN	PRIMEROS AUXILIOS
Inhalación	Tos.	Usar ventilación. Usar extracción localizada o protección respiratoria.	Aire limpio, reposo. Proporcionar asistencia médica.
Piel	Enrojecimiento. Dolor.	Guantes de protección.	Quitar las ropas contaminadas. Aclarar y lavar la piel con agua y jabón. Proporcionar asistencia médica.
Ojos	Enrojecimiento. Dolor.	Utilizar gafas de protección de montura integral o protección ocular en combinación con protección respiratoria.	Enjuagar con agua abundante durante varios minutos (quitar las lentes de contacto si puede hacerse con facilidad), después proporcionar asistencia médica.
Ingestión	Diarrea. Vértigo. Náuseas. Vómitos.	No comer, ni beber, ni fumar durante el trabajo.	Enjuagar la boca. Dar a beber uno o dos vasos de agua. Proporcionar asistencia médica.

DERRAMES Y FUGAS	CLASIFICACIÓN Y ETIQUETADO
<p>Eliminar toda fuente de ignición. ¡Evacuar la zona de peligro! Protección personal: respirador con filtro para gases y vapores orgánicos adaptado a la concentración de la sustancia en el aire. NO permitir que este producto químico se incorpore al ambiente. Recoger el líquido procedente de la fuga en recipientes precintables. Absorber el líquido residual en arena o absorbente inerte. A continuación, almacenar y eliminar el residuo conforme a la normativa local. NO absorber en serrín u otros absorbentes combustibles. Eliminar el vapor con agua pulverizada.</p>	<p>Conforme a los criterios del GHS de la ONU</p> <p>Transporte Clasificación ONU Clase de Peligro ONU: 3; Grupo de Embalaje/Envase ONU: I</p>
ALMACENAMIENTO	
A prueba de incendio. Separado de materiales incompatibles. Ver Peligros Químicos. Enfriado. Mantener en la oscuridad. Almacenar solamente si está estabilizado.	
ENVASADO	
Envase irrompible. Colocar el envase frágil dentro de un recipiente irrompible cerrado.	

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ACETALDEHÍDO

ICSC: 0009

INFORMACIÓN FÍSICO-QUÍMICA

Estado físico; aspecto

GAS O LÍQUIDO INCOLORO DE OLOR ACRE.

Peligros físicos

El vapor es más denso que el aire y puede extenderse a ras del suelo; posible ignición en punto distante.

Peligros químicos

El contacto con aire genera peróxidos explosivos. La sustancia puede polimerizar bajo la influencia de ácidos e hidróxidos alcalinos en presencia de trazas metálicas (hierro). Esto genera peligro de incendio y explosión. La sustancia es un reductor fuerte. Reacciona violentamente con oxidantes, ácidos fuertes, halógenos y aminas. Esto genera peligro de incendio o explosión.

Fórmula: C_2H_4O / CH_3CHO

Masa molecular: 44.1

Punto de ebullición: 20.2°C

Punto de fusión: -123°C

Densidad relativa (agua = 1): 0.78

Solubilidad en agua: miscible

Presión de vapor, kPa a 20°C: 101

Densidad relativa de vapor (aire = 1): 1.5

Punto de inflamación: -38°C c.c.

Temperatura de autoignición: 185°C

Límites de explosividad, % en volumen en el aire: 4-60

Coeficiente de reparto octanol/agua como log Pow: 0.63

EXPOSICIÓN Y EFECTOS SOBRE LA SALUD

Vías de exposición

La sustancia se puede absorber por inhalación y por ingestión.

Efectos de exposición de corta duración

La sustancia irrita levemente los ojos, la piel y el tracto respiratorio. La sustancia puede afectar al sistema nervioso central.

Riesgo de inhalación

Por evaporación de esta sustancia a 20°C se puede alcanzar muy rápidamente una concentración nociva en el aire.

Efectos de exposición prolongada o repetida

El contacto prolongado o repetido con la piel puede producir dermatitis. La sustancia puede afectar al tracto respiratorio. Esto puede dar lugar a lesiones del tejido. Esta sustancia es posiblemente carcinógena para los seres humanos.

LÍMITES DE EXPOSICIÓN LABORAL

TLV: 25 ppm como STEL; (valor techo): A3 (cancerígeno animal).

MAK: 91 mg/m³, 50 ppm; categoría de limitación de pico: I(1); cancerígeno: categoría 5; riesgo para el embarazo: grupo C; mutágeno: categoría 5

MEDIO AMBIENTE

La sustancia es nociva para los organismos acuáticos.

NOTAS

Está indicado un examen médico periódico dependiendo del grado de exposición.

El valor límite de exposición laboral aplicable no debe ser superado en ningún momento por la exposición en el trabajo.

La adición de estabilizantes o inhibidores puede influir sobre las propiedades toxicológicas de esta sustancia; consultar a un experto.

Enjuagar la ropa contaminada con agua abundante (peligro de incendio).

INFORMACIÓN ADICIONAL

- Límites de exposición profesional (INSHT 2011):

VLA-EC: 25 ppm; 46 mg/m³

- N° de índice (clasificación y etiquetado armonizados conforme al Reglamento CLP de la UE): 605-003-00-6

- **Clasificación UE**

Pictograma: F+, Xn; R: 12-36/37-40; S: (2)-16-33-36/37

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 INSTALLATION: 10:43:56 A.M.

ASPEN PLUS PLAT: WIN-X64 VER: 37.0 07/12/2020 PAGE I

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RUN CONTROL SECTION

RUN CONTROL INFORMATION

THIS COPY OF ASPEN PLUS LICENSED TO UNIVERSIDAD DE VALLADOLI

TYPE OF RUN: EDIT

INPUT FILE NAME: _0052nsd.inm

INPUT PROBLEM DATA FILE NAME : _0052nsd

OUTPUT PROBLEM DATA FILE NAME: _4208gqt

LOCATED IN:

PDF SIZE USED FOR INPUT TRANSLATION:

 NUMBER OF FILE RECORDS (PSIZE) = 0

 NUMBER OF IN-CORE RECORDS = 256

PSIZE NEEDED FOR SIMULATION = 1

CALLING PROGRAM NAME: apmain

SIMULATION REQUESTED FOR ENTIRE FLOWSHEET

DESCRIPTION

General Simulation with Metric Units : C, bar, kg/hr, kmol/hr,
Gcal/hr, cum/hr. Property Method: None Flow basis for input: Mole
Stream report composition: Mole flow
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FLOWSHEET SECTION

FLOWSHEET CONNECTIVITY BY STREAMS

STREAM	SOURCE	DEST	STREAM	SOURCE	DEST
12	----	T-201	3	----	C-101
1	----	E-101	2	----	E-102
31	----	MIX2	8	MIX1	R-IMAG
9	R-101	E-104	8A	R-IMAG	R-101
13	T-201	----	14	T-201	E-205
19	T-202	E-207	20	T-202	----
21	E-207	T-203	22	T-203	----
23	T-203	P-204	24	P-204	E-209
25	T-204	SPLIT	26	T-204	MIX2
S4	T-204	E-205	28	SPLIT	----
29	SPLIT	V-101	30	V-101	T-202
L	E-209	T-204	6	C-101	E-103
4	E-101	MIX1	5	E-102	MIX1
7	E-103	MIX1	S6	E-205	----
15	E-205	E-104	10	E-104	B6
16	E-104	E-208	17O18	E-208	T-202
11	B6	T-201	27	MIX2	----

FLOWSHEET CONNECTIVITY BY BLOCKS

BLOCK	INLETS	OUTLETS
MIX1	7 4 5	8
R-101	8A	9
R-IMAG	8	8A
T-201	11 12	13 14
T-202	17O18 30	19 20
E-207	19	21
T-203	21	22 23
P-204	23	24
T-204	L	25 26 S4
SPLIT	25	28 29
V-101	29	30
E-209	24	L
C-101	3	6
E-101	1	4
E-102	2	5
E-103	6	7
E-205	S4 14	S6 15
E-104	9 15	10 16
E-208	16	17O18
B6	10	11
MIX2	31 26	27

FLOWSHEET SECTION

CONVERGENCE STATUS SUMMARY

DESIGN-SPEC SUMMARY
=====

DESIGN				CONV		
SPEC	ERROR	TOLERANCE	ERR/TOL	VARIABLE	STAT	BLOCK
DP	0.61124E-10	0.10000E-07	0.61124E-02	4.8127 #	\$SOLVER02	

TEAR STREAM SUMMARY

=====

STREAM ID	VARIABLE ID	MAXIMUM ERR/TOL	MAX. ERR. RELATIVE	ABSOLUTE ERROR	CONV STAT	BLOCK
L	PROPYLENMOLEFLOW	0.54391E-02	-0.54391E-06	0.20819E-20	#	\$SOLVER01
11	N2 MOLEFLOW	0.0000	0.0000	0.0000	#	\$SOLVER01

= CONVERGED
 * = NOT CONVERGED
 LB = AT LOWER BOUNDS
 UB = AT UPPER BOUNDS

DESIGN-SPEC: DP

SAMPLED VARIABLES:

THR : SENTENCE=PARAM VARIABLE=RES-TIME IN UOS BLOCK R-101

SPECIFICATION:

MAKE THR APPROACH 0.90000

WITHIN 0.100000-07

MANIPULATED VARIABLES:

VARY : SENTENCE=PARAM VARIABLE=LENGTH IN UOS BLOCK R-101

LOWER LIMIT = 1.00000 METER

UPPER LIMIT = 10.0000 METER

FINAL VALUE = 4.81272 METER

VALUES OF ACCESSED FORTRAN VARIABLES:

VARIABLE	VALUE AT START	FINAL VALUE	UNITS
THR	0.561084	0.900000	SEC

CONVERGENCE BLOCK: \$SOLVER01

Tear Stream : L 11

Tolerance used: 0.100D-03 0.100D-03

Trace molefrac: 0.100D-05 0.100D-05

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FLowsheet section

CONVERGENCE BLOCK: \$SOLVER01 (CONTINUED)

MAXIT= 30 WAIT 1 ITERATIONS BEFORE ACCELERATING

QMAX = 0.0 QMIN = -5.0

METHOD: WEGSTEIN STATUS: CONVERGED

TOTAL NUMBER OF ITERATIONS: 17

NUMBER OF ITERATIONS ON LAST OUTER LOOP: 1

*** FINAL VALUES ***

VAR#	TEAR STREAM	VAR	STREAM	SUBSTREA	COMPONEN	UNIT	VALUE	PREV VALUE	ERR/TOL
1	TOTAL MOLEFLOW	L	MIXED		KMOL/HR	156.9604	156.9604	4.6890-05	
2	TOTAL MOLEFLOW	11	MIXED		KMOL/HR	2159.2875	2159.2875	0.0	
3	MOLE-FLOW	L	MIXED	N2	KMOL/HR	7.5925-21	7.5925-21	-4.2549-03	
4	MOLE-FLOW	L	MIXED	ARGON	KMOL/HR	1.1713-19	1.1713-19	-4.6703-03	
5	MOLE-FLOW	L	MIXED	O2	KMOL/HR	1.0908-20	1.0908-20	-4.3812-03	
6	MOLE-FLOW	L	MIXED	CO2	KMOL/HR	7.6481-11	7.6481-11	-4.9527-03	
7	MOLE-FLOW	L	MIXED	PROPYLEN	KMOL/HR	1.3780-11	1.3780-11	-5.4391-03	

8	MOLE-FLOW	L	MIXED	FORMA-01	KMOL/HR	4.6240-02	4.6240-02	-3.3851-03
9	MOLE-FLOW	L	MIXED	ACETALD	KMOL/HR	1.4876	1.4876	-4.1267-03
10	MOLE-FLOW	L	MIXED	ACROL	KMOL/HR	137.5598	137.5598	9.4221-05
11	MOLE-FLOW	L	MIXED	H2O	KMOL/HR	17.8667	17.8667	3.8867-05
12	MOLE-FLOW	L	MIXED	AC-ACET	KMOL/HR	2.0667-06	2.0667-06	-2.0838-04
13	MOLE-FLOW	L	MIXED	AC-ACRY	KMOL/HR	1.0013-04	1.0013-04	-5.4525-04
14	MOLE-FLOW	L	MIXED	HIDROQUI	KMOL/HR	0.0	0.0	0.0
15	PRESSURE	L	MIXED	KPA		575.0000	575.0000	0.0
16	MASS ENTHALPY	L	MIXED	KCAL/KG		-563.7566	-563.7566	3.2374-05
17	MOLE-FLOW	11	MIXED	N2	KMOL/HR	861.2961	861.2961	0.0
18	MOLE-FLOW	11	MIXED	ARGON	KMOL/HR	11.4050	11.4050	0.0
19	MOLE-FLOW	11	MIXED	O2	KMOL/HR	51.8374	51.8374	0.0
20	MOLE-FLOW	11	MIXED	CO2	KMOL/HR	50.4188	50.4188	0.0
21	MOLE-FLOW	11	MIXED	PROPYLEN	KMOL/HR	10.9428	10.9428	0.0
22	MOLE-FLOW	11	MIXED	FORMA-01	KMOL/HR	4.9720	4.9720	0.0
23	MOLE-FLOW	11	MIXED	ACETALD	KMOL/HR	1.8645	1.8645	0.0
24	MOLE-FLOW	11	MIXED	ACROL	KMOL/HR	79.4752	79.4752	0.0
25	MOLE-FLOW	11	MIXED	H2O	KMOL/HR	1071.8645	1071.8645	0.0
26	MOLE-FLOW	11	MIXED	AC-ACET	KMOL/HR	3.1075	3.1075	0.0
27	MOLE-FLOW	11	MIXED	AC-ACRY	KMOL/HR	12.1037	12.1037	0.0
28	MOLE-FLOW	11	MIXED	HIDROQUI	KMOL/HR	0.0	0.0	0.0
29	PRESSURE	11	MIXED	KPA		180.0000	180.0000	0.0
30	MASS ENTHALPY	11	MIXED	KCAL/KG		-1264.7517	-1264.7517	0.0

*** ITERATION HISTORY ***

TEAR STREAMS AND TEAR VARIABLES:

ITERATION MAX-ERR/TOL VAR# STREAM ID VAR DESCRIPTION SUBSTREA COMPONEN ATTRIBUT ELEMENT

1 -0.5439E-02 7 L MOLE-FLO MIXED PROPYLEN
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FLOWSHEET SECTION

CONVERGENCE BLOCK: \$SOLVER02

SPECS: DP
 MAXIT= 30 STEP-SIZE= 1.0000 % OF RANGE
 MAX-STEP= 100. % OF RANGE
 XTOL= 1.000000E-08
 THE NEW ALGORITHM WAS USED WITH BRACKETING=NO
 METHOD: SECANT STATUS: CONVERGED
 TOTAL NUMBER OF ITERATIONS: 4
 NUMBER OF ITERATIONS ON LAST OUTER LOOP: 0

*** FINAL VALUES ***

DESIGN SP								
VAR#	VAR NAME	CALCULATOR	VARIABLE DESCRIPTION	UNIT	VALUE	PREV VALUE	ERR/TOL	
1	VARY DP	R-101.PARAM.LENGTH	METER	4.8127	4.8125	6.1124-03		

*** ITERATION HISTORY ***

DESIGN-SPEC ID: DP
ITERATED: SENTENCE=PARAM VARIABLE=LENGTH IN UOS BLOCK R-101

ITERATION	VARIABLE	ERROR	ERR/TOL
1	3.000	-0.3389	-0.3389E+08
2	3.090	-0.3221	-0.3221E+08
3	4.813	-0.3813E-04	-3813.
4	4.813	0.6112E-10	0.6112E-02

COMPUTATIONAL SEQUENCE

SEQUENCE USED WAS:
FIRE-HEA ELECTRIC REFRI-1 LPS CW C-101 E-102 E-101 E-103 MIX1 R-IMAG

\$SOLVER02 R-101
(RETURN \$SOLVER02)
\$SOLVER01 T-201 T-204 SPLIT V-101 E-205 E-104 B6 E-208 T-202 E-207 T-203
| P-204 E-209
(RETURN \$SOLVER01)
MIX2 HPS MPS REFR-3 VLT

OVERALL FLOWSHEET BALANCE

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FLOWSHEET SECTION

OVERALL FLOWSHEET BALANCE (CONTINUED)

*** MASS AND ENERGY BALANCE ***				
	IN	OUT	GENERATION	RELATIVE DIFF.
CONVENTIONAL COMPONENTS				
(KMOL/HR)				
N2	861.296	861.296	0.00000	-0.521908E-12
ARGON	11.4050	11.4050	0.00000	-0.356874E-10
O2	231.622	51.8374	-179.785	-0.629979E-12
CO2	0.00000	50.4188	50.4188	-0.348636E-08
PROPYLEN	124.300	10.9428	-113.357	-0.289515E-10
FORMA-01	0.00000	5.87901	4.97200	-0.154279
ACETALD	0.00000	9.65803	1.86450	-0.806948
ACROL	0.00000	474.611	79.4752	-0.832547
H2O	22220.0	22471.2	141.998	-0.485795E-02
AC-ACET	0.00000	3.10750	3.10750	-0.144780E-10
AC-ACRY	0.00000	12.1037	12.1037	-0.578909E-10
HIDROQUI	0.391418E-01	0.391418E-01	0.00000	0.00000
TOTAL BALANCE				
MOLE(KMOL/HR)	23448.7	23962.5	0.797536	-0.214085E-01
MASS(KG/HR)	437530.	462020.		-0.530067E-01
ENTHALPY(KW)	-0.174410E+07	-0.176759E+07		0.132884E-01

*** CO2 EQUIVALENT SUMMARY ***			
FEED STREAMS CO2E	0.00000	KG/HR	
PRODUCT STREAMS CO2E	2218.92	KG/HR	
NET STREAMS CO2E PRODUCTION	2218.92	KG/HR	
UTILITIES CO2E PRODUCTION	11174.7	KG/HR	
TOTAL CO2E PRODUCTION	13393.6	KG/HR	
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PHYSICAL PROPERTIES SECTION

COMPONENTS

ID	TYPE	ALIAS	NAME
N2	C	N2	NITROGEN
ARGON	C	AR	ARGON
O2	C	O2	OXYGEN
CO2	C	CO2	CARBON-DIOXIDE
PROPYLEN	C	C3H6-2	PROPYLENE
FORMA-01	C	CH2O	FORMALDEHYDE
ACETALD	C	C2H4O-1	ACETALDEHYDE
ACROL	C	C3H4O	ACROLEIN
H2O	C	H2O	WATER
AC-ACET	C	C2H4O2-1	ACETIC-ACID
AC-ACRY	C	C3H4O2-1	ACRYLIC-ACID
HIDROQUI	C	C6H6O2	P-HYDROQUINONE

LISTID SUPERCRITICAL COMPONENT LIST
HC-1 PROPYLEN O2 N2 ARGON CO2

PARAMETER VALUES

CONVENTIONAL COMPONENT - UNARY PARAMETER TABLE

PARAMETER COMPONENTS						
NAME/SET/EL	N2	ARGON	O2	CO2	PROPYLEN	
ZC 1	2.89000-01	2.91000-01	2.88000-01	2.74000-01	2.81000-01	
TC 1	1.26200+02	1.50860+02	1.54580+02	3.04210+02	3.64850+02	
PC 1	3.40000+06	4.89800+06	5.04300+06	7.38300+06	4.60000+06	
MW 1	2.80135+01	3.99480+01	3.19988+01	4.40098+01	4.20806+01	
PLXANT 1 1	5.82820+01	4.21270+01	5.12450+01	4.70170+01	4.39050+01	
	2 -1.08410+03	-1.09310+03	-1.20020+03	-2.83900+03	-3.09780+03	
	3 0.0	0.0	0.0	0.0	0.0	
	4 0.0	0.0	0.0	0.0	0.0	
	5 -8.31440 00	-4.14250 00	-6.43610 00	-3.86390 00	-3.44250 00	
	6 4.41270-02	5.72540-05	2.84050-02	2.81120-16	9.99890-17	
	7 1.00000 00	2.00000 00	1.00000 00	6.00000 00	6.00000 00	
	8 6.31500+01	8.37800+01	5.43600+01	2.16580+02	8.78900+01	
	9 1.26200+02	1.50860+02	1.54580+02	3.04210+02	3.64850+02	
TB 1	7.73440+01	8.72800+01	9.01880+01	1.94700+02	2.25450+02	
CPIG 1 1	MISSING	2.08042+04	MISSING	1.97952+04	MISSING	
	2 0.0	-3.21128-02	0.0	7.34365+01	0.0	
	3 0.0	5.16651-05	0.0	-5.60194-02	0.0	
	4 0.0	0.0	0.0	1.71533-05	0.0	
	5 0.0	0.0	0.0	0.0	0.0	
	6 0.0	0.0	0.0	0.0	0.0	
	7 0.0	3.50000+02	0.0	3.00000+02	0.0	
	8 1.00000+03	1.00000+03	1.00000+03	1.08860+03	1.00000+03	
	9 MISSING	2.07850+04	MISSING	2.90990+04	MISSING	
	10 MISSING	2.15170-03	MISSING	7.18760-01	MISSING	
	11 MISSING	1.50000 00	MISSING	1.63680 00	MISSING	
DHVLWT 1 1	MISSING	MISSING	MISSING	MISSING	MISSING	
	2 MISSING	MISSING	MISSING	MISSING	MISSING	
	3 3.80000-01	3.80000-01	3.80000-01	3.80000-01	3.80000-01	
	4 0.0	0.0	0.0	0.0	0.0	

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

	5 0.0	0.0	0.0	0.0	0.0	
OMEGA 1	3.77215-02	0.0	2.21798-02	2.23621-01	1.37588-01	
DHFORM 1	0.0	0.0	0.0	-3.93510+08	2.02300+07	
DGFORM 1	0.0	0.0	0.0	-3.94370+08	6.26400+07	
VLSTD 1	5.35578-02	5.35578-02	5.35578-02	5.35578-02	8.08566-02	
SG 1	3.00000-01	3.00000-01	3.00000-01	3.00000-01	5.22000-01	
API 1	3.40000+02	3.40000+02	3.40000+02	3.40000+02	1.39600+02	
WATSOL 1 1	-5.30000 00	-5.30000 00	-5.30000 00	-5.30000 00	3.47154 00	
	2 -5.00000+02	-5.00000+02	-5.00000+02	-5.00000+02	-3.02813+03	
	3 0.0	0.0	0.0	0.0	0.0	
	4 2.00000+02	2.00000+02	2.00000+02	2.00000+02	2.95000+02	
	5 3.73000+02	3.73000+02	3.73000+02	3.73000+02	3.59000+02	
CHARGE 1	0.0	0.0	0.0	0.0	0.0	
HIGPY 1 1	MISSING	MISSING	MISSING	MISSING	MISSING	
	2 0.0	0.0	0.0	0.0	0.0	
	3 0.0	0.0	0.0	0.0	0.0	
	4 0.0	0.0	0.0	0.0	0.0	
	5 0.0	0.0	0.0	0.0	0.0	
	6 0.0	0.0	0.0	0.0	0.0	
	7 0.0	0.0	0.0	0.0	0.0	
	8 0.0	0.0	0.0	0.0	0.0	
	9 0.0	0.0	0.0	0.0	0.0	
	10 1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03	
PSEUDO 1	MISSING	MISSING	MISSING	MISSING	MISSING	
CPIGDP 1 1	2.91050+04	2.07860+04	2.91030+04	2.93700+04	4.38520+04	
	2 8.61490+03	0.0	1.00400+04	3.45400+04	1.50600+05	
	3 1.70160+03	0.0	2.52650+03	1.42800+03	1.39880+03	
	4 1.03470+02	0.0	9.35600+03	2.64000+04	7.47540+04	
	5 9.09790+02	0.0	1.15380+03	5.88000+02	6.16460+02	
	6 5.00000+01	1.00000+02	5.00000+01	5.00000+01	1.30000+02	
	7 1.50000+03	1.50000+03	1.50000+03	5.00000+03	1.50000+03	
ATOMNO 1 1	7.00000 00	1.80000+01	8.00000 00	6.00000 00	6.00000 00	
	2 0.0	0.0	0.0	8.00000 00	1.00000 00	
	3 0.0	0.0	0.0	0.0	0.0	
	4 0.0	0.0	0.0	0.0	0.0	

5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
NOATOM	1 1	2.00000 00	1.00000 00	2.00000 00	1.00000 00 3.00000 00
2	0.0	0.0	0.0	2.00000 00	6.00000 00
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
CPIXP1	1 1	2.98150+02	2.98150+02	2.98150+02	2.98150+02 2.98150+02
2	1.00000+03	5.00000+03	1.00000+03	1.00000+03	1.00000+03
3	-6.55614+06	-6.19735+06	-3.46467+06	-4.05519+08	9.87573+06
4	1.68923+05	1.39216+05	9.71783+04	2.08205+05	2.31965+05
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

5	-2.53171+04	-2.07860+04	-1.32017+04	-2.93419+04	-3.70702+03
6	-1.10356 00	0.0	-2.27567+01	-2.24028+01	-1.17194+02
7	-1.70199-03	0.0	5.72448-03	4.04634-03	1.93231-02
8	4.53696-07	0.0	-8.14234-07	-4.10886-07	-1.83608-06
9	-2.42771+08	0.0	-4.19015+08	2.83617+08	0.0
10	1.35946+10	0.0	1.77957+10	-1.25450+10	0.0
CPIXP2	1 1	1.00000+03 MISSING	1.00000+03	1.00000+03 MISSING	
2	5.00000+03 MISSING	3.00000+03	3.00000+03 MISSING		
3	-2.20569+07 MISSING	-1.82818+07	-4.29051+08 MISSING		
4	2.57745+05 0.0	2.68238+05	4.13593+05 0.0		
5	-3.67817+04 0.0	-3.88584+04	-5.88099+04 0.0		
6	-2.86246-01 0.0	1.45889 00	-1.63155 00 0.0		
7	1.70355-05 0.0	-3.10073-04	1.51679-04 0.0		
8	-7.51771-10 0.0	2.04865-08	-8.83643-09 0.0		
9	4.20149+09 0.0	1.68355+09	5.30058+09 0.0		
10	-6.39852+11 0.0	-1.13530+11	-6.06527+11 0.0		
CPIXP3	1 1	MISSING MISSING	3.00000+03 MISSING	MISSING	MISSING
2	MISSING MISSING	5.00000+03 MISSING	MISSING	MISSING	
3	MISSING MISSING	-5.77657+07 MISSING	MISSING	MISSING	
4	0.0 0.0	2.97323+05 0.0	0.0		
5	0.0 0.0	-4.05502+04 0.0	0.0		
6	0.0 0.0	-1.99026 00 0.0	0.0		
7	0.0 0.0	1.85450-04 0.0	0.0		
8	0.0 0.0	-8.49773-09 0.0	0.0		
9	0.0 0.0	4.83512+10 0.0	0.0		
10	0.0 0.0	-2.42056+13 0.0	0.0		
TFP	1	MISSING MISSING	MISSING MISSING	MISSING	MISSING
S025E	1	1.91609+05	1.54845+05	2.05147+05	2.10887+05 4.09261+05
WAGNER	1 1	MISSING MISSING	MISSING MISSING	MISSING	MISSING
2	0.0 0.0	0.0 0.0	0.0 0.0		
3	0.0 0.0	0.0 0.0	0.0 0.0		
4	0.0 0.0	0.0 0.0	0.0 0.0		
5	0.0 0.0	0.0 0.0	0.0 0.0		
6	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DHVLDS	1 1	MISSING MISSING	MISSING MISSING	MISSING	MISSING
2	0.0 0.0	0.0 0.0	0.0 0.0		
3	0.0 0.0	0.0 0.0	0.0 0.0		
4	0.0 0.0	0.0 0.0	0.0 0.0		
5	0.0 0.0	0.0 0.0	0.0 0.0		
6	0.0 0.0	0.0 0.0	0.0 0.0		
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPIGDS	1 1	MISSING MISSING	MISSING MISSING	MISSING	MISSING
2	0.0 0.0	0.0 0.0	0.0 0.0		
3	0.0 0.0	0.0 0.0	0.0 0.0		
4	0.0 0.0	0.0 0.0	0.0 0.0		
5	0.0 0.0	0.0 0.0	0.0 0.0		

6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	3.00000+03	3.00000+03	3.00000+03	3.00000+03	3.00000+03
CPIGYM	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	1.00000	00	1.00000	00	1.00000 00 1.00000 00

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PARAMETER VALUES (CONTINUED)

5	0.0	0.0	0.0	0.0	0.0
6	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
PDSNEL	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
HCTYPE	1	0.0	0.0	0.0	3.00000 00
VC	1	8.92100-02	7.45900-02	7.34000-02	9.40000-02 1.85000-01
HCSOL	1	1	MISSING	MISSING	MISSING MISSING -8.47605 00
2	MISSING	MISSING	MISSING	MISSING	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
FREEZEPT	1	6.31490+01	8.37800+01	5.43610+01	2.16580+02 8.79000+01
CPIAPI	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
CPIGPO	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPIALEE	1	1	2.91009+04	2.07862+04	2.91119+04 2.91802+04 3.41001+04
2	7.56652+03	-1.98806-07	8.86320+03	3.20045+04	1.32545+05
3	1.97712+03	3.59311+03	2.18719+03	1.14834+03	8.71983+02
4	2.96500+03	1.09610-08	8.19658+03	1.98678+04	3.77334+04
5	1.44043+03	1.16988+03	1.10710+03	5.08320+02	2.96127+02
6	-1.70003+02	0.0	-1.72922+02	-1.94125+02	-2.93967+02
7	8.31447 00	8.31447 00	8.31447 00	8.31447 00	8.31447 00
8	5.00000+01	2.00000+02	5.00000+01	5.00000+01	5.00000+01
9	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPITMLPO	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	6.00000 00	6.00000 00	6.00000 00	6.00000 00	6.00000 00
8	0.0	0.0	0.0	0.0	0.0
9	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPIWEOS	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

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8 0.0      0.0      0.0      0.0      0.0
9 0.0      0.0      0.0      0.0      0.0
10 0.0     0.0     0.0     0.0     0.0
11 8.31447 00 8.31447 00 8.31447 00 8.31447 00 8.31447 00
12 1.00000 00 1.00000 00 1.00000 00 1.00000 00 1.00000 00
13 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
CMPCLASS 1 1.00000+02 1.00000+02 1.00000+02 1.00000+02 1.10000+02 2.20000+02
ZWITTER 1 0.0      0.0      0.0      0.0      0.0
TPT 1 6.31490+01 8.37800+01 5.43610+01 2.16580+02 8.78900+01
HFUS 1 7.20000+05 1.18200+06 4.44000+05 9.01900+06 2.93600+06
DCPLS 1 8.94006+03 MISSING MISSING 1.42584+04 2.93019+04
PSXANT 1 1 1.25050+04 1.83410+01 1.47600+02 3.85910+01 3.19770+01
2 0.0      -8.96090+02 0.0      -3.43480+03 -3.40370+03
3 0.0      0.0      0.0      0.0      0.0
4 0.0      8.39270-01 0.0      -1.79630 00 0.0
5 0.0      -3.17660-05 0.0      8.37570-16 0.0
6 2.00000 00 2.00000 00 2.00000 00 6.00000 00 0.0
7 0.0      0.0      0.0      0.0      0.0
8 6.31500+01 6.18600+01 5.43600+01 7.53600+01 3.78900+01
9 6.31500+01 8.37800+01 5.43600+01 2.16580+02 8.78900+01
HCOM 1 0.0      0.0      0.0      0.0      -1.92620+09
RKTZRA 1 2.89970-01 2.93170-01 2.89250-01 2.72560-01 2.77530-01
VCRKT 1 8.92100-02 7.45900-02 7.34000-02 9.40000-02 1.85000-01
RACKET 1 1 MISSING MISSING MISSING MISSING MISSING
2 MISSING MISSING MISSING MISSING MISSING
3 0.0      0.0      0.0      0.0      0.0
4 0.0      0.0      0.0      0.0      0.0
5 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
DNLDIP 1 1 3.20910 00 3.84690 00 3.91430 00 2.76800 00 1.44030 00
2 2.86100-01 2.88100-01 2.87720-01 2.62120-01 2.68520-01
3 1.26200+02 1.50860+02 1.54580+02 3.04210+02 3.64850+02
4 2.96600-01 2.97830-01 2.92400-01 2.90800-01 2.87750-01
5 0.0      0.0      0.0      0.0      0.0
6 6.31500+01 8.37800+01 5.43500+01 2.16580+02 8.78900+01
7 1.26200+02 1.50860+02 1.54580+02 3.04210+02 3.64850+02
DNL PDS 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0      0.0      0.0      0.0      0.0
3 0.0      0.0      0.0      0.0      0.0
4 0.0      0.0      0.0      0.0      0.0
5 0.0      0.0      0.0      0.0      0.0
6 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
RHOM 1 0.0      0.0      0.0      0.0      0.0
DNLEXSAT 1 1 1.11530+01 1.33536+01 1.35439+01 1.06037+01 5.47157 00
2 2.05301+01 2.39204+01 2.44961+01 2.10871+01 1.03820+01
3 7.09581 00 1.18594+01 1.19541+01 1.12368+01 5.16304 00
4 3.39550 00 -1.14430+01 -8.65370 00 -1.72973+01 -3.93636 00
5 -5.88841 00 1.27291+01 7.96928 00 3.10016+01 3.63960 00
6 0.0      0.0      0.0      0.0      0.0
7 0.0      0.0      0.0      0.0      0.0
8 1.26207+02 1.50718+02 1.54645+02 3.04159+02 3.64949+02
9 4.00000 00 4.00000 00 4.00000 00 4.00000 00 4.00000 00
10 6.31480+01 8.37940+01 5.43607+01 2.16589+02 8.78500+01
11 1.26207+02 1.50718+02 1.54645+02 3.04159+02 3.64949+02
DNL TMLPO 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0      0.0      0.0      0.0      0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

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3 0.0      0.0      0.0      0.0      0.0
4 0.0      0.0      0.0      0.0      0.0
5 4.00000 00 4.00000 00 4.00000 00 4.00000 00 4.00000 00
6 0.0      0.0      0.0      0.0      0.0
7 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
DNL RACK 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0      0.0      0.0      0.0      0.0
3 MISSING MISSING MISSING MISSING MISSING

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4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
VLPO	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DNLCD	1 1	9.20833-02	7.56348-02	7.53852-02	9.78304-02
2	1.35666-01	1.95710-02	1.05705-01	4.44422-01	2.24361-01
3	1.26207+02	1.50718+02	1.54645+02	3.04179+02	3.64957+02
4	6.40000+01	8.40000+01	5.43610+01	2.17000+02	9.31580+01
5	1.19897+02	1.43182+02	1.46913+02	2.88970+02	3.46709+02
MULAND	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	5.00000+02	5.00000+02	5.00000+02	5.00000+02	5.00000+02
MULDIP	1 1	1.60040+01	-8.86850 00	-4.14760 00	1.87750+01
2	-1.81610+02	2.04290+02	9.40400+01	-4.02920+02	1.90730+03
3	-5.15510 00	-3.83050-01	-1.20700 00	-4.68540 00	1.56390+01
4	0.0	-1.29370-22	0.0	-6.91710-26	-4.30980-02
5	0.0	1.00000+01	0.0	1.00000+01	1.00000 00
6	6.31500+01	8.37800+01	5.43600+01	2.16580+02	8.78900+01
7	1.24000+02	1.50000+02	1.50000+02	3.03150+02	3.33150+02
TRNSWT	1 1	1.01000+02	1.01000+02	1.01000+02	1.01000+02
2	1.02000+02	1.02000+02	1.02000+02	1.02000+02	1.02000+02
3	1.00000+02	1.00000+02	1.00000+02	1.00000+02	1.23000+02
4	1.02000+02	1.02000+02	1.02000+02	1.02000+02	1.02000+02
5	1.06000+02	1.06000+02	1.06000+02	1.06000+02	1.06000+02
MULPDS	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MULIKC	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

4	0.0	0.0	0.0	0.0	0.0
5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MULPO	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MULNVE	1 1	-2.00541+01	-2.33298+01	MISSING	-4.63832+01
2	2.11574+03	3.78839+03	0.0	2.52354+04	1.77638+03
3	-1.40962+05	-3.39553+05	0.0	-5.81525+06	-1.96025+05
4	3.47764+06	1.07884+07	0.0	4.63869+08	9.90364+06
5	6.39000+01	8.41000+01	0.0	2.20009+02	8.87000+01

6 1.24513+02 1.41114+02 1.00000+03 2.99994+02 3.62836+02
 MULPPDS9 1 1 MISSING MISSING 2.39443-05 MISSING 1.20797-05
 2 0.0 0.0 2.14276 00 0.0 2.65076 00
 3 0.0 0.0 5.24973-08 0.0 3.61705-02
 4 0.0 0.0 1.38767+02 0.0 3.94372+02
 5 0.0 0.0 3.59215+01 0.0 6.36714+01
 6 0.0 0.0 5.59098+01 0.0 8.87000+01
 7 1.00000+03 1.00000+03 9.02500+01 1.00000+03 3.62836+02
 KLDIP 1 1 2.65400-01 1.81900-01 2.74100-01 4.40600-01 9.98740-02
 2 -1.67700-03 -3.17600-04 -1.38000-03 -1.21750-03 -1.34090 00
 3 0.0 -4.11000-06 0.0 0.0 1.65450 00
 4 0.0 0.0 0.0 0.0 1.33340 00
 5 0.0 0.0 0.0 0.0 0.0
 6 6.31500+01 8.37800+01 6.00000+01 2.16580+02 8.78900+01
 7 1.24000+02 1.50000+02 1.50000+02 3.00000+02 3.40490+02
 KLPDS 1 1 MISSING MISSING MISSING MISSING MISSING
 2 0.0 0.0 0.0 0.0 0.0
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 KLPO 1 1 MISSING MISSING MISSING MISSING MISSING
 2 0.0 0.0 0.0 0.0 0.0
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 0.0 0.0 0.0 0.0 0.0
 7 0.0 0.0 0.0 0.0 0.0
 8 0.0 0.0 0.0 0.0 0.0
 9 0.0 0.0 0.0 0.0 0.0
 10 0.0 0.0 0.0 0.0 0.0
 11 0.0 0.0 0.0 0.0 0.0
 12 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 KLTMLO 1 1 MISSING 1.84982-01 2.13322-01 MISSING 1.93473-01
 2 0.0 -4.86332-04 -2.30583-04 0.0 -3.76081-04
 3 0.0 -3.00338-06 -5.20695-06 0.0 8.38779-07
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

4 0.0 0.0 0.0 0.0 -2.19119-09
 5 4.00000 00 3.00000 00 3.00000 00 4.00000 00 4.00000 00
 6 0.0 9.00080+01 8.31500+01 0.0 9.00000+01
 7 1.00000+03 1.44689+02 1.43158+02 1.00000+03 3.20000+02
 KLPPDS8 1 1 MISSING MISSING MISSING MISSING MISSING
 2 0.0 0.0 0.0 0.0 0.0
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 0.0 0.0 0.0 0.0 0.0
 7 0.0 0.0 0.0 0.0 0.0
 8 MISSING MISSING MISSING MISSING MISSING
 9 7.00000 00 7.00000 00 7.00000 00 7.00000 00 7.00000 00
 10 0.0 0.0 0.0 0.0 0.0
 11 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 VB 1 3.46723-02 2.86156-02 2.80225-02 3.50189-02 6.88009-02
 MUP 1 0.0 0.0 0.0 0.0 1.15660-25
 LJPAR 1 1 1.00693+02 1.19406+02 1.22931+02 2.52299+02 2.97277+02
 2 3.65722-10 3.44150-10 3.43317-10 3.76074-10 4.69319-10
 STKPAR 1 1 9.12659+01 1.02990+02 1.06422+02 2.29746+02 2.66128+02
 2 3.80193-10 3.56624-10 3.54143-10 3.81456-10 4.77700-10
 DVBLNC 1 1.00000 00 1.00000 00 1.00000 00 1.00000 00 1.00000 00
 DLWC 1 1.00000 00 1.00000 00 1.00000 00 1.00000 00 1.00000 00
 CHI 1 0.0 0.0 0.0 0.0 0.0
 SIGDIP 1 1 2.86990-02 3.82300-02 3.80140-02 8.41400-02 5.31180-02
 2 1.23850 00 1.29270 00 1.20980 00 1.28400 00 1.19930 00
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 6.31500+01 8.37800+01 5.43500+01 2.16580+02 8.78900+01

	7	1.26200+02	1.50860+02	1.54580+02	3.04210+02	3.64850+02
SIGPDS	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
SIGPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0
	12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
SIGISTE	1 1	MISSING	MISSING	MISSING	MISSING	3.31541-02
	2	0.0	0.0	0.0	2.81821-02	
	3	0.0	0.0	0.0	0.0	
	4	0.0	0.0	0.0	0.0	
	5	MISSING	MISSING	MISSING	MISSING	3.64949+02
	6	4.00000 00	4.00000 00	4.00000 00	4.00000 00	2.00000 00
	7	0.0	0.0	0.0	2.11546+02	

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

	8	1.00000+03	1.00000+03	1.00000+03	1.00000+03	2.50268+02
SIGPDS14	1 1	3.17755-02	3.67858-02	4.28408-02	MISSING	2.96318-02
	2	1.27868 00	1.25669 00	1.27338 00	0.0	9.55421-01
	3	-1.68761-01	2.16400-02	-1.39702-01	0.0	1.08488 00
	4	1.26207+02	1.50718+02	1.54645+02	MISSING	3.64946+02
	5	7.80900+01	8.38200+01	7.97600+01	0.0	2.11046+02
	6	1.20253+02	1.40006+02	1.46864+02	1.00000+03	2.50019+02
SIGTDEW	1 1	-3.43682 00	-3.28684 00	-3.28335 00	MISSING	1.77089-01
	2	1.77950 00	1.26427 00	1.20918 00	0.0	1.39554+01
	3	-9.79467-01	0.0	-1.17989-01	0.0	-2.21176+01
	4	4.86449-01	0.0	1.46251-01	0.0	1.08541+01
	5	1.26207+02	1.50718+02	1.54645+02	MISSING	3.64957+02
	6	4.00000 00	2.00000 00	4.00000 00	4.00000 00	4.00000 00
	7	7.80900+01	8.38200+01	7.97600+01	0.0	2.11546+02
	8	1.26207+02	1.50718+02	1.48785+02	1.00000+03	2.81509+02
VKGRP	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	MISSING	MISSING	MISSING	MISSING	MISSING
	3	MISSING	MISSING	MISSING	MISSING	MISSING
	4	MISSING	MISSING	MISSING	MISSING	MISSING
	5	MISSING	MISSING	MISSING	MISSING	MISSING
	6	MISSING	MISSING	MISSING	MISSING	MISSING
	7	MISSING	MISSING	MISSING	MISSING	MISSING
	8	MISSING	MISSING	MISSING	MISSING	MISSING
	9	MISSING	MISSING	MISSING	MISSING	MISSING
	10	MISSING	MISSING	MISSING	MISSING	MISSING
	11	MISSING	MISSING	MISSING	MISSING	MISSING
	12	MISSING	MISSING	MISSING	MISSING	MISSING
	13	MISSING	MISSING	MISSING	MISSING	MISSING
	14	MISSING	MISSING	MISSING	MISSING	MISSING
	15	MISSING	MISSING	MISSING	MISSING	MISSING
	16	MISSING	MISSING	MISSING	MISSING	MISSING
	17	MISSING	MISSING	MISSING	MISSING	MISSING
	18	MISSING	MISSING	MISSING	MISSING	MISSING
	19	MISSING	MISSING	MISSING	MISSING	MISSING
	20	MISSING	MISSING	MISSING	MISSING	MISSING
	21	MISSING	MISSING	MISSING	MISSING	MISSING
	22	MISSING	MISSING	MISSING	MISSING	MISSING
	23	MISSING	MISSING	MISSING	MISSING	MISSING
	24	MISSING	MISSING	MISSING	MISSING	MISSING
DHFVK	1	MISSING	MISSING	MISSING	MISSING	MISSING
DGFVK	1	MISSING	MISSING	MISSING	MISSING	MISSING

DHFVKM	1	MISSING	MISSING	MISSING	MISSING	MISSING
DGFVKM	1	MISSING	MISSING	MISSING	MISSING	MISSING
DGCON	1	MISSING	MISSING	MISSING	MISSING	MISSING
DGCONM	1	MISSING	MISSING	MISSING	MISSING	MISSING
DHCON	1	MISSING	MISSING	MISSING	MISSING	MISSING
DHCONM	1	MISSING	MISSING	MISSING	MISSING	MISSING
DGSUB	1	MISSING	MISSING	MISSING	MISSING	MISSING
DGSUBM	1	MISSING	MISSING	MISSING	MISSING	MISSING
DHSUB	1	MISSING	MISSING	MISSING	MISSING	MISSING
DHSUBM	1	MISSING	MISSING	MISSING	MISSING	MISSING
THRSWT	1 1	1.00000+02	1.00000+02	1.00000+02	1.00000+02	1.00000+02
	2	1.05000+02	1.05000+02	1.05000+02	1.05000+02	1.05000+02
	3	1.01000+02	1.01000+02	1.01000+02	1.01000+02	1.01000+02
	4	1.06000+02	1.06000+02	1.06000+02	1.06000+02	1.06000+02

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

	5	1.00000+02	0.0	1.00000+02	1.00000+02	1.00000+02
	6	1.00000+02	1.00000+02	1.00000+02	1.00000+02	1.00000+02
	7	1.07000+02	1.00000+02	1.07000+02	1.07000+02	1.07000+02
	8	1.04000+02	1.04000+02	1.04000+02	1.04000+02	1.04000+02
NATOM	1 1	0.0	0.0	0.0	1.00000 00	3.00000 00
	2	0.0	0.0	0.0	0.0	6.00000 00
	3	0.0	0.0	2.00000 00	2.00000 00	0.0
	4	2.00000 00	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	1.00000 00	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0
DHAQFM	1	0.0	-1.21000+07	-1.17000+07	-4.13800+08	0.0
CPLXP1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	MISSING	MISSING	MISSING	MISSING	MISSING
	3	MISSING	MISSING	MISSING	MISSING	MISSING
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
CPLXP2	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	MISSING	MISSING	MISSING	MISSING	MISSING
	3	MISSING	MISSING	MISSING	MISSING	MISSING
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
PLPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0
	12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
LNVP1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	MISSING	MISSING	MISSING	MISSING	MISSING
	3	MISSING	MISSING	MISSING	MISSING	MISSING
LNVP1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING

2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
LOGVP1 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
LNPR1 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
LOGPR1 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
LNPR2 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
LOGPR2 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
PLTDEPOL 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
9 0.0 0.0 0.0 0.0 0.0
10 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
WAGNER25 1 1 -6.13259 00 -5.87954 00 -6.00263 00 -7.04526 00 -6.41578 00
2 1.31903 00 1.14578 00 1.11209 00 1.61543 00 7.29396-01
3 -9.01556-01 -4.99977-01 -4.84961-01 -2.46092 00 -6.23143-01
4 -1.50046 00 -1.67650 00 -1.72986 00 -2.37610 00 -2.91042 00
5 1.50388+01 1.53955+01 1.54335+01 1.58145+01 1.53398+01
6 1.26207+02 1.50718+02 1.54645+02 3.04179+02 3.64957+02
7 6.31480+01 8.37940+01 5.43607+01 2.16570+02 8.78500+01
8 1.26207+02 1.50718+02 1.54645+02 3.04179+02 3.64957+02
CPIGHY 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

6 0.0 0.0 0.0 0.0 0.0
7 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
8 MISSING MISSING MISSING MISSING MISSING

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PSANT 1 1 MISSING MISSING MISSING MISSING MISSING
2 MISSING MISSING MISSING MISSING MISSING
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
PSTDEPOL 1 1 2.34377+01 2.28841+01 2.24393+01 2.76141+01 4.71227+01
2 -8.32476+02 -9.60056+02 -9.49070+02 -3.13151+03 -3.59661+03
3 -1.97860-01 -6.49311-02 0.0 0.0 -3.00000 00
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
9 3.56100+01 7.46530+01 4.37000+01 6.96970+01 4.39250+01
10 6.31480+01 8.37940+01 5.43607+01 2.16570+02 8.78500+01
PSTMLPOL 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
9 8.00000 00 8.00000 00 8.00000 00 8.00000 00 8.00000 00
10 0.0 0.0 0.0 0.0 0.0
11 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
CPSP01 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
DHSFRM 1 0.0 0.0 0.0 0.0 0.0
CPSPDIP 1 1 2.74200+04 MISSING -1.38000+04 -1.82820+04 -2.17220+02
2 1.70100+02 0.0 1.37900+03 1.36030+03 -1.34390+02
3 2.21250 00 0.0 0.0 -1.21520+01 4.64740+01
4 0.0 0.0 0.0 5.15800-02 -7.99180-01
5 0.0 0.0 0.0 -7.69900-05 4.33490-03
6 3.70000+01 0.0 1.34600+01 2.50000+01 1.40000+01
7 6.30000+01 1.00000+03 4.37800+01 2.16580+02 8.78900+01
CPSXP1 1 1 MISSING MISSING MISSING MISSING MISSING
2 MISSING MISSING MISSING MISSING MISSING
3 MISSING MISSING MISSING MISSING MISSING
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
9 0.0 0.0 0.0 0.0 0.0
10 0.0 0.0 0.0 0.0 0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

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CPSXP2 1 1 MISSING MISSING MISSING MISSING MISSING
2 MISSING MISSING MISSING MISSING MISSING
3 MISSING MISSING MISSING MISSING MISSING
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
9 0.0 0.0 0.0 0.0 0.0
10 0.0 0.0 0.0 0.0 0.0
CPSXP3 1 1 MISSING MISSING MISSING MISSING MISSING
2 MISSING MISSING MISSING MISSING MISSING
3 MISSING MISSING MISSING MISSING MISSING
4 0.0 0.0 0.0 0.0 0.0

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5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
CPSXP4	1	1	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
CPSXP5	1	1	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
CPSXP6	1	1	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
CPSXP7	1	1	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
TREFHS	1	2.98150+02	2.98150+02	2.98150+02	2.98150+02
CPSP0	1	1	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPSTMLPO	1	1	2.86969+04	MISSING	MISSING
2	1.18781+02	0.0	0.0	0.0	1.55718+03
3	2.72566	00	0.0	0.0	-1.41233+01
4	0.0	0.0	0.0	0.0	7.03509-02
5	0.0	0.0	0.0	0.0	0.0
6	3.00000	00	5.00000	00	5.00000
7	3.56100+01	0.0	0.0	0.0	1.41800+01

8	6.31480+01	1.00000+03	1.00000+03	1.00000+03	8.78500+01
DGSFRM	1	0.0	0.0	0.0	0.0
VSPOLY	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DNSDIP	1 1	3.78700+01	4.43330+01	4.45520+01	3.29390+01
2	-6.02720-02	0.0	0.0	6.84200-02	-2.17540-02
3	0.0	0.0	0.0	-2.84700-04	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	2.06500+01	0.0	2.06500+01	1.43100+02	7.86000+01
7	6.31500+01	0.0	2.06500+01	2.16580+02	8.78900+01
VSPOLY	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DNSTMLPO	1 1	3.80588+01	MISSING	MISSING	MISSING
2	-6.92011-02	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	2.00000 00	8.00000 00	8.00000 00	8.00000 00	8.00000 00
10	5.08000+01	0.0	0.0	0.0	0.0
11	6.22000+01	1.00000+03	1.00000+03	1.00000+03	1.00000+03
KSPOLY	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
UFGRPD	1 1	3.82000+03	3.87000+03	3.83000+03	3.85000+03
2	1.00000 00	1.00000 00	1.00000 00	1.00000 00	1.00000 00
3	MISSING	MISSING	MISSING	MISSING	1.07000+03
4	MISSING	MISSING	MISSING	MISSING	1.00000 00
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING
10	MISSING	MISSING	MISSING	MISSING	MISSING
11	MISSING	MISSING	MISSING	MISSING	MISSING
12	MISSING	MISSING	MISSING	MISSING	MISSING
13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING
15	MISSING	MISSING	MISSING	MISSING	MISSING
16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING

21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING
23	MISSING	MISSING	MISSING	MISSING	MISSING
24	MISSING	MISSING	MISSING	MISSING	MISSING
UFG RPL	1 1	3.82000+03	3.87000+03	3.83000+03	3.85000+03 1.01500+03
2	1.00000 00	1.00000 00	1.00000 00	1.00000 00	1.00000 00
3	MISSING	MISSING	MISSING	MISSING	1.07000+03
4	MISSING	MISSING	MISSING	MISSING	1.00000 00
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING
10	MISSING	MISSING	MISSING	MISSING	MISSING
11	MISSING	MISSING	MISSING	MISSING	MISSING
12	MISSING	MISSING	MISSING	MISSING	MISSING
13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING
15	MISSING	MISSING	MISSING	MISSING	MISSING

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING
21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING
23	MISSING	MISSING	MISSING	MISSING	MISSING
24	MISSING	MISSING	MISSING	MISSING	MISSING
UFG RPL	1 1	3.82000+03	3.87000+03	3.83000+03	3.85000+03 1.01500+03
2	1.00000 00	1.00000 00	1.00000 00	1.00000 00	1.00000 00
3	MISSING	MISSING	MISSING	MISSING	1.07000+03
4	MISSING	MISSING	MISSING	MISSING	1.00000 00
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING
10	MISSING	MISSING	MISSING	MISSING	MISSING
11	MISSING	MISSING	MISSING	MISSING	MISSING
12	MISSING	MISSING	MISSING	MISSING	MISSING
13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING
15	MISSING	MISSING	MISSING	MISSING	MISSING
16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING
21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING
23	MISSING	MISSING	MISSING	MISSING	MISSING
24	MISSING	MISSING	MISSING	MISSING	MISSING
UFG RPL	2 1	3.82000+03	3.87000+03	3.83000+03	3.85000+03 1.01500+03
2	1.00000 00	1.00000 00	1.00000 00	1.00000 00	1.00000 00
3	MISSING	MISSING	MISSING	MISSING	1.07000+03
4	MISSING	MISSING	MISSING	MISSING	1.00000 00
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING
10	MISSING	MISSING	MISSING	MISSING	MISSING
11	MISSING	MISSING	MISSING	MISSING	MISSING
12	MISSING	MISSING	MISSING	MISSING	MISSING
13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING

15	MISSING	MISSING	MISSING	MISSING	MISSING
16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING
21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

23	MISSING	MISSING	MISSING	MISSING	MISSING	
24	MISSING	MISSING	MISSING	MISSING	MISSING	
GMUQR	1	1.04153 00	1.10745 00	8.56955-01	1.29862 00	2.24654 00
GMUQQ	1	1.08800 00	1.06800 00	9.40000-01	1.29200 00	2.02400 00
GMUQQ1	1	1.08800 00	1.06800 00	9.40000-01	1.29200 00	2.02400 00
DHVLDP	1 1	7.49050+06	8.42150+06	9.00800+06	2.17300+07	2.52160+07
	2	4.04060-01	2.83330-01	4.54200-01	3.82000-01	3.37210-01
	3	-3.17000-01	3.32810-02	-4.09600-01	-4.33900-01	-1.83990-01
	4	2.73430-01	3.05510-02	3.18300-01	4.22130-01	2.23770-01
	5	0.0	0.0	0.0	0.0	0.0
	6	6.31500+01	8.37800+01	5.43600+01	2.16580+02	8.78900+01
	7	1.26200+02	1.50860+02	1.54580+02	3.04210+02	3.64850+02
DHVLB	1	5.56831+06	6.42697+06	6.78526+06	1.63703+07	1.87317+07
DHVLPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0
	12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DHVLTD	1 1	1.57636+01	1.60592+01	1.59184+01	1.69150+01	1.72717+01
	2	3.01031-01	7.33486-01	4.84679-02	7.63804-02	1.23574 00
	3	-3.38000-01	-7.82708-01	2.46650-01	3.21604-01	-1.56359 00
	4	3.90896-01	4.46238-01	3.84475-02	-2.90290-02	7.75286-01
	5	1.26207+02	1.50718+02	1.54645+02	3.04179+02	3.64957+02
	6	4.00000 00	4.00000 00	4.00000 00	4.00000 00	4.00000 00
	7	6.00000+01	7.00000+01	5.43607+01	1.50000+02	9.00000+01
	8	1.26207+02	1.50718+02	1.54645+02	3.04179+02	3.64957+02
MUVDIP	1 1	6.55920-07	9.21210-07	1.10100-06	2.14800-06	7.39190-07
	2	6.08100-01	6.05290-01	5.63400-01	4.60000-01	5.42300-01
	3	5.47140+01	8.32400+01	9.63000+01	2.90000+02	2.63730+02
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	6.31500+01	8.37800+01	5.43500+01	1.94670+02	8.78900+01
	7	1.97000+03	3.27310+03	1.50000+03	1.50000+03	1.00000+03
MUVPDS	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MUVCEB	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	MISSING	MISSING	MISSING	MISSING	MISSING
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MUVSUT	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MUVPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

2	0.0	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	0.0	
4	0.0	0.0	0.0	0.0	0.0	
5	0.0	0.0	0.0	0.0	0.0	
6	0.0	0.0	0.0	0.0	0.0	
7	0.0	0.0	0.0	0.0	0.0	
8	0.0	0.0	0.0	0.0	0.0	
9	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	
11	0.0	0.0	0.0	0.0	0.0	
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03	
MUVTMLPO	1 1	8.27404-07	2.30642-06	-1.15179-06	-1.02944-06	2.42051-06
	2	6.76246-08	7.67503-08	9.20923-08	5.94243-08	3.73710-09
	3	-3.99026-11	-2.96219-11	-7.48922-11	-2.12059-11	8.26799-11
	4	1.23174-14	6.13724-15	3.14011-14	4.20271-15	-8.68726-14
	5	4.00000 00	4.00000 00	4.00000 00	4.00000 00	4.00000 00
	6	8.00000+01	9.00000+01	1.00000+02	2.03111+02	1.93475+02
	7	1.59964+03	2.50295+03	5.23171+02	1.87151+03	5.23171+02
KVDIP	1 1	3.31430-04	6.33000-04	4.49940-04	3.69000 00	4.49000-05
	2	7.72200-01	6.22100-01	7.45600-01	-3.83800-01	1.20180 00
	3	1.63230+01	7.00000+01	5.66990+01	9.64000+02	4.21000+02
	4	3.73720+02	0.0	0.0	1.86000+06	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	6.31500+01	9.00000+01	8.00000+01	1.94670+02	2.25450+02
	7	2.00000+03	3.27310+03	2.00000+03	1.50000+03	1.00000+03
KVPDS	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
KVPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0
	12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPLPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0
	12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

CPLIKC	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPLTDECS	1 1	8.82310+04	3.26751+04	5.71661+04	2.07985+05	1.33842+05
	2	-8.99113+02	1.69499+01	-1.86091+02	-1.14168+03	-8.79619+02
	3	5.74513 00	0.0	1.04681 00	2.52683 00	4.49004 00

4 0.0 0.0 0.0 0.0 -7.53224-03
 5 1.49362+03 3.75763+03 2.19054+03 1.92002+03 5.44296+03
 6 1.26207+02 1.50718+02 1.54645+02 3.04179+02 3.64957+02
 7 3.00000 00 2.00000 00 3.00000 00 3.00000 00 4.00000 00
 8 6.31480+01 8.37940+01 5.43607+01 2.16570+02 8.78500+01
 9 1.23683+02 1.40000+02 1.44600+02 2.94701+02 3.44235+02
 CPLTMLPO 1 1 MISSING MISSING MISSING MISSING MISSING
 2 0.0 0.0 0.0 0.0 0.0
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 5.00000 00 5.00000 00 5.00000 00 5.00000 00 5.00000 00
 7 0.0 0.0 0.0 0.0 0.0
 8 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 KVTMLPO 1 1 -9.48672-04 1.55727-03 -1.02613-03 -3.53595-03 -5.71007-03
 2 1.12115-04 5.86542-05 1.07656-04 5.50553-05 4.66501-05
 3 -8.40439-08 -1.72161-08 -5.80063-08 4.78778-08 1.11761-07
 4 3.81846-11 2.27672-12 2.32658-11 -2.93547-11 -2.29114-11
 5 4.00000 00 4.00000 00 4.00000 00 4.00000 00 4.00000 00
 6 7.82000+01 9.00080+01 8.31500+01 1.86422+02 2.30000+02
 7 1.13512+03 5.00000+03 9.50140+02 9.51092+02 6.33108+02
 VLBROC 1 1 8.96408-02 7.48588-02 7.33611-02 9.39446-02 1.85000-01
 2 0.0 0.0 0.0 0.0 0.0

PARAMETER COMPONENTS

NAME/SET/EL FORMA-01 ACETALD ACROL H2O AC-ACET
 ZC 1 1.61000-01 2.21000-01 2.34000-01 2.29000-01 2.08000-01
 TC 1 4.20000+02 4.66000+02 5.06000+02 6.47096+02 5.91950+02
 PC 1 6.59000+06 5.57000+06 5.00000+06 2.20640+07 5.78600+06
 MW 1 3.00263+01 4.40532+01 5.60642+01 1.80153+01 6.00526+01
 PLXANT 1 1 4.93630+01 5.29110+01 1.38400+02 7.36490+01 5.32700+01
 2 -3.84790+03 -4.64310+03 -7.12270+03 -7.25820+03 -6.30450+03
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 -4.09830 00 -4.50680 00 -1.96380+01 -7.30370 00 -4.29850 00
 6 4.63630-17 2.70280-17 2.64470-02 4.16530-06 8.88650-18
 7 6.00000 00 6.00000 00 1.00000 00 2.00000 00 6.00000 00
 8 1.55150+02 1.49780+02 1.85450+02 2.73160+02 2.89810+02
 9 4.20000+02 4.66000+02 5.06000+02 6.47100+02 5.91950+02
 TB 1 2.53850+02 2.94150+02 3.25840+02 3.73150+02 3.91050+02
 CPIG 1 1 MISSING MISSING MISSING MISSING MISSING
 2 0.0 0.0 0.0 0.0 0.0
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

6 0.0 0.0 0.0 0.0 0.0
 7 0.0 0.0 0.0 0.0 0.0
 8 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 9 MISSING MISSING MISSING MISSING MISSING
 10 MISSING MISSING MISSING MISSING MISSING
 11 MISSING MISSING MISSING MISSING MISSING
 DHVLWT 1 1 MISSING MISSING MISSING MISSING MISSING
 2 MISSING MISSING MISSING MISSING MISSING
 3 3.80000-01 3.80000-01 3.80000-01 3.80000-01 3.80000-01
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 OMEGA 1 1.67887-01 2.62493-01 3.19832-01 3.44861-01 4.66521-01
 DHFORM 1 -1.08600+08 -1.71000+08 -8.18000+07 -2.41818+08 -4.32800+08
 DGFORM 1 -1.02600+08 -1.37800+08 -5.68000+07 -2.28572+08 -3.74600+08
 VLSTD 1 3.92100-02 5.62823-02 6.71900-02 1.80500-02 5.76300-02
 SG 1 7.67708-01 7.84600-01 8.36507-01 1.00000 00 1.05530 00
 API 1 5.28148+01 4.89000+01 3.76558+01 1.00000+01 2.60000 00
 WATSOL 1 1 1.83479 00 2.13153 00 2.13296 00 1.76832 00 1.68148 00
 2 -2.43382+03 -2.49695+03 -2.46443+03 -2.28298+03 -2.23450+03
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0

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5 9.60163+02 8.81839+02 8.69912+02 9.24913+02 9.38283+02
CHARGE 1 0.0 0.0 0.0 0.0 0.0
HIGPY 1 1 MISSING MISSING MISSING MISSING MISSING
2 0.0 0.0 0.0 0.0 0.0
3 0.0 0.0 0.0 0.0 0.0
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
9 0.0 0.0 0.0 0.0 0.0
10 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
PSEUDO 1 MISSING MISSING MISSING MISSING MISSING
CPIGDP 1 1 3.35030+04 4.82510+04 5.70190+04 3.33630+04 4.02000+04
2 4.93940+04 1.06650+05 9.18300+04 2.67900+04 1.36750+05
3 1.92800+03 1.99290+03 7.67470+02 2.61050+03 1.26200+03
4 2.97280+04 7.88510+04 3.85540+04 8.89600+03 7.00300+04
5 9.65040+02 9.12780+02 2.37540+03 1.16900+03 5.69700+02
6 2.98150+02 2.98150+02 2.98150+02 1.00000+02 5.00000+01
7 1.50000+03 1.50000+03 1.50000+03 2.27315+03 1.50000+03
ATOMNO 1 1 6.00000 00 6.00000 00 6.00000 00 1.00000 00 6.00000 00
2 1.00000 00 1.00000 00 1.00000 00 8.00000 00 1.00000 00
3 8.00000 00 8.00000 00 8.00000 00 0.0 8.00000 00
4 0.0 0.0 0.0 0.0 0.0
5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
9 0.0 0.0 0.0 0.0 0.0
10 0.0 0.0 0.0 0.0 0.0
NOATOM 1 1 1.00000 00 2.00000 00 3.00000 00 2.00000 00 2.00000 00
2 2.00000 00 4.00000 00 4.00000 00 1.00000 00 4.00000 00
3 1.00000 00 1.00000 00 1.00000 00 0.0 2.00000 00
4 0.0 0.0 0.0 0.0 0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

```

5 0.0 0.0 0.0 0.0 0.0
6 0.0 0.0 0.0 0.0 0.0
7 0.0 0.0 0.0 0.0 0.0
8 0.0 0.0 0.0 0.0 0.0
9 0.0 0.0 0.0 0.0 0.0
10 0.0 0.0 0.0 0.0 0.0
CPIXP1 1 1 2.98150+02 2.98150+02 MISSING 2.98150+02 MISSING
2 1.50000+03 1.00000+03 MISSING 1.20000+03 MISSING
3 -1.18338+08 -1.75909+08 MISSING -2.52304+08 MISSING
4 6.27173+04 2.12773+05 0.0 2.68010+05 0.0
5 -2.83780+03 -7.71111+03 0.0 -3.32484+04 0.0
6 -4.94671+01 -9.10648+01 0.0 2.37049-01 0.0
7 8.34760-03 1.67639-02 0.0 -2.17949-03 0.0
8 -7.97610-07 -1.98217-06 0.0 3.66987-07 0.0
9 -3.87617+08 0.0 0.0 1.17992+08 0.0
10 6.45418+09 0.0 0.0 -9.24171+09 0.0
CPIXP2 1 1 1.50000+03 MISSING MISSING 1.20000+03 MISSING
2 3.00000+03 MISSING MISSING 2.50000+03 MISSING
3 -1.95162+08 MISSING MISSING -2.80324+08 MISSING
4 6.37113+05 0.0 0.0 3.67548+05 0.0
5 -8.34404+04 0.0 0.0 -4.46634+04 0.0
6 1.85633-02 0.0 0.0 -3.70790 00 0.0
7 0.0 0.0 0.0 1.85761-04 0.0
8 0.0 0.0 0.0 -2.79906-09 0.0
9 2.00540+10 0.0 0.0 1.16931+10 0.0
10 -3.16294+12 0.0 0.0 -2.30214+12 0.0
CPIXP3 1 1 MISSING MISSING MISSING 2.50000+03 MISSING
2 MISSING MISSING MISSING 5.00000+03 MISSING
3 MISSING MISSING MISSING -2.66964+08 MISSING
4 0.0 0.0 0.0 3.34868+05 0.0
5 0.0 0.0 0.0 -4.07975+04 0.0
6 0.0 0.0 0.0 -4.39824 00 0.0

```

7	0.0	0.0	0.0	2.47266-04	0.0
8	0.0	0.0	0.0	-7.91235-09	0.0
9	0.0	0.0	0.0	4.83595+08	0.0
10	0.0	0.0	0.0	2.44832+12	0.0
TFP	1	MISSING	MISSING	MISSING	MISSING
S025E	1	2.38994+05	3.75414+05	0.0	0.0 4.77988+05
WAGNER	1 1	MISSING	MISSING	MISSING	MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DHVLDS	1 1	MISSING	MISSING	MISSING	MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPIGDS	1 1	MISSING	MISSING	MISSING	MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	3.00000+03	3.00000+03	3.00000+03	3.00000+03	3.00000+03
CPIGYM	1 1	MISSING	MISSING	MISSING	MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	1.00000 00	1.00000 00	1.00000 00	1.00000 00	1.00000 00
5	0.0	0.0	0.0	0.0	0.0
6	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
PDSNEL	1 1	MISSING	MISSING	MISSING	MISSING MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING MISSING
HCTYPE	1	0.0	0.0	0.0	0.0
VC	1	8.51000-02	1.54000-01	1.97000-01	5.59472-02 1.77000-01
HCSOL	1 1	MISSING	MISSING	MISSING	MISSING MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
FREEZEPT	1	1.55150+02	1.49780+02	1.85450+02	2.73150+02 2.89810+02
CPIAPI	1 1	MISSING	MISSING	MISSING	MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
CPIGPO	1 1	MISSING	MISSING	MISSING	MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPIALEE	1 1	3.33079+04	3.63861+04	3.55165+04	3.32748+04 4.00116+04
2	5.04575+04	9.39032+04	1.20114+05	2.38638+04	1.31185+05
3	1.89870+03	9.07265+02	7.69221+02	2.35934+03	1.14946+03

4 2.86409+04 2.43613+04 3.88947+04 7.35122+03 5.86892+04
 5 9.41430+02 2.93878+02 2.84585+02 1.07562+03 5.28377+02
 6 -2.40766+02 -2.74888+02 -2.93775+02 -2.11279+02 -3.44091+02
 7 8.31447 00 8.31447 00 8.31447 00 8.31447 00 8.31447 00
 8 5.00000+01 5.00000+01 5.00000+01 5.00000+01 5.00000+01
 9 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 CPITMLPO 1 1 MISSING MISSING MISSING MISSING MISSING
 2 0.0 0.0 0.0 0.0 0.0
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 0.0 0.0 0.0 0.0 0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

7 6.00000 00 6.00000 00 6.00000 00 6.00000 00 6.00000 00
 8 0.0 0.0 0.0 0.0 0.0
 9 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 CPIWEOS 1 1 MISSING MISSING MISSING MISSING MISSING
 2 0.0 0.0 0.0 0.0 0.0
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 0.0 0.0 0.0 0.0 0.0
 7 0.0 0.0 0.0 0.0 0.0
 8 0.0 0.0 0.0 0.0 0.0
 9 0.0 0.0 0.0 0.0 0.0
 10 0.0 0.0 0.0 0.0 0.0
 11 8.31447 00 8.31447 00 8.31447 00 8.31447 00 8.31447 00
 12 1.00000 00 1.00000 00 1.00000 00 1.00000 00 1.00000 00
 13 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 CMPCLASS 1 4.40000+02 4.40000+02 4.40000+02 1.00000+02 4.50000+02
 ZWITTER 1 0.0 0.0 0.0 0.0 0.0
 TPT 1 1.55150+02 1.49780+02 1.85450+02 2.73160+02 2.89810+02
 HFUS 1 5.44000+06 2.31000+06 1.02000+07 6.00174+06 1.17300+07
 DCPLS 1 2.10336+04 2.39090+04 MISSING 3.80282+04 2.72997+04
 PSXANT 1 1 2.90060+01 2.88060+01 3.00900+01 2.87660+01 3.47360+01
 2 -3.89680+03 -4.41400+03 -5.14770+03 -6.10920+03 -7.99350+03
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 0.0 0.0 0.0 0.0 0.0
 7 0.0 0.0 0.0 0.0 0.0
 8 5.51500+01 4.97800+01 1.35450+02 1.49300+02 2.23150+02
 9 1.55150+02 1.49780+02 1.85450+02 2.73160+02 2.89810+02
 HCOM 1 -5.26800+08 -1.10460+09 -1.54680+09 0.0 -8.14600+08
 RKTZRA 1 2.20990-01 2.38830-01 2.40840-01 2.43172-01 2.24010-01
 VCRKT 1 8.51000-02 1.54000-01 1.97000-01 5.59472-02 1.77000-01
 RACKET 1 1 MISSING MISSING MISSING MISSING MISSING
 2 MISSING MISSING MISSING MISSING MISSING
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 DNLDIP 1 1 3.89700 00 1.71140 00 1.32610 00 1.78630+01 1.44860 00
 2 3.31640-01 2.63550-01 2.61240-01 5.86060+01 2.58920-01
 3 4.20000+02 4.66000+02 5.06000+02 -9.53960+01 5.91950+02
 4 2.85710-01 2.85710-01 2.48900-01 2.13890+02 2.52900-01
 5 0.0 0.0 0.0 -1.41260+02 0.0
 6 1.55150+02 1.49780+02 1.85450+02 2.73160+02 2.89810+02
 7 4.20000+02 4.66000+02 5.06000+02 6.47100+02 5.91950+02
 DNLPDS 1 1 MISSING MISSING MISSING MISSING MISSING
 2 0.0 0.0 0.0 0.0 0.0
 3 0.0 0.0 0.0 0.0 0.0
 4 0.0 0.0 0.0 0.0 0.0
 5 0.0 0.0 0.0 0.0 0.0
 6 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
 RHOM 1 0.0 0.0 0.0 0.0 0.0
 DNLEXSAT 1 1 1.01356+01 6.49218 00 5.29996 00 1.70358+01 5.97725 00
 2 2.23590+01 1.41622+01 1.08179+01 4.72437+01 1.17811+01

PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

4	1.85087+01	3.94448 00	2.03487 00	3.14451+01	-1.05739+01
5	-1.30703+01	-1.98272 00	-1.30389 00	-5.61482+01	1.13323+01
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	4.16500+02	4.62089+02	5.28000+02	6.47108+02	5.92998+02
9	4.00000 00	4.00000 00	4.00000 00	4.00000 00	4.00000 00
10	1.55170+02	1.49794+02	1.85360+02	2.73160+02	2.89686+02
11	4.16500+02	4.62089+02	5.28000+02	6.47108+02	5.92998+02
DNLTMLPO 1 1 MISSING MISSING MISSING MISSING MISSING					
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	4.00000 00	4.00000 00	4.00000 00	4.00000 00	4.00000 00
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DNLRAK 1 1 MISSING MISSING MISSING MISSING MISSING					
2	0.0	0.0	0.0	0.0	0.0
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
VLPO 1 1 MISSING MISSING MISSING MISSING MISSING					
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DNLCOSTD 1 1 1.04807-01 1.53196-01 1.92467-01 3.17123-02 1.62453-01					
2	4.66030-01	2.94438-01	3.22132-01	-2.49864 00	9.51786-02
3	4.18100+02	4.64107+02	5.28000+02	6.47108+02	5.92998+02
4	1.60000+02	1.50000+02	1.90000+02	2.73620+02	2.89720+02
5	3.97195+02	4.40901+02	5.01600+02	6.14753+02	5.63348+02
MULAND 1 1 MISSING MISSING MISSING MISSING MISSING					
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	5.00000+02	5.00000+02	5.00000+02	5.00000+02	5.00000+02
MULDIP 1 1 -7.65910 00 -1.09760+01 -1.20320+01 -5.28430+01 -9.03000 00					
2	6.03360+02	7.55120+02	8.67340+02	3.70360+03	1.21230+03
3	-5.33780-01	0.0	1.95340-01	5.86600 00	-3.22000-01
4	0.0	0.0	0.0	-5.87900-29	0.0
5	0.0	0.0	0.0	1.00000+01	0.0
6	1.55150+02	1.49780+02	1.85450+02	2.73160+02	2.89810+02
7	2.53850+02	2.94150+02	3.53220+02	6.46150+02	3.91050+02
TRNSWT 1 1 1.01000+02 1.01000+02 1.01000+02 1.01000+02 1.01000+02					
2	1.02000+02	1.02000+02	1.02000+02	1.02000+02	1.02000+02
3	1.00000+02	1.00000+02	1.00000+02	1.00000+02	1.00000+02
4	1.02000+02	1.02000+02	1.02000+02	1.02000+02	1.00000+02
5	1.06000+02	1.06000+02	1.06000+02	1.06000+02	1.06000+02

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

MULPDS 1 1 MISSING MISSING MISSING MISSING MISSING					
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	MISSING	MISSING	MISSING	MISSING	MISSING

6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MULIKC	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MULPO	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
MULNVE	1 1	MISSING	-1.95295+01	MISSING	-1.28076+01
2	0.0	8.29715+03	0.0	3.09186+03	6.80972+03
3	0.0	-2.21628+06	0.0	-9.04388+05	-1.85614+06
4	0.0	2.17016+08	0.0	1.48132+08	2.07973+08
5	0.0	2.00000+02	0.0	2.73640+02	2.91139+02
6	1.00000+03	4.60000+02	1.00000+03	6.14137+02	5.90000+02
MULPPDS9	1 1	MISSING	MISSING	3.94876-06	2.35667-05
2	0.0	0.0	2.02333 00	1.60517 00	4.40901-01
3	0.0	0.0	2.83840-01	3.11425-01	4.13513-01
4	0.0	0.0	1.14398+03	7.39062+02	6.45156+02
5	0.0	0.0	3.87329+01	1.49524+02	1.46590+02
6	0.0	0.0	2.30000+02	2.73640+02	2.91139+02
7	1.00000+03	1.00000+03	5.20000+02	6.45106+02	4.45339+02
KLDIP	1 1	3.36000-01	3.35150-01	2.70300-01	-4.32000-01
2	-5.40000-04	-5.52270-04	-3.76400-04	5.72550-03	-1.83400-04
3	0.0	0.0	0.0	-8.07800-06	0.0
4	0.0	0.0	0.0	1.86100-09	0.0
5	0.0	0.0	0.0	0.0	0.0
6	1.55150+02	1.49780+02	1.85450+02	2.73160+02	2.89810+02
7	2.53850+02	2.94150+02	3.25840+02	6.33150+02	3.91050+02
KLPDS	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
KLPO	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
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PARAMETER VALUES (CONTINUED)

6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
KLTMLO	1 1	MISSING	2.42173-01	2.56591-01	-6.65373-01
2	0.0	8.32704-05	-4.63111-04	7.35553-03	3.96768-04
3	0.0	-8.74704-07	9.24470-07	-1.16254-05	-9.35791-07
4	0.0	-1.07999-11	-1.32408-09	4.25020-09	0.0
5	4.00000 00	4.00000 00	4.00000 00	4.00000 00	3.00000 00
6	0.0	1.50000+02	1.90000+02	2.73150+02	2.78149+02
7	1.00000+03	4.10000+02	4.70000+02	6.21224+02	5.30000+02
KLPPDS8	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0

3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	7.00000 00	7.00000 00	7.00000 00	7.00000 00	7.00000 00
10	0.0	0.0	0.0	0.0	0.0
11	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
VB	1	3.64900-02	5.64935-02	6.97649-02	1.88311-02 6.39308-02
MUP	1	7.36618-25	8.50382-25	9.85950-25	5.84934-25 5.49857-25
LJP	1	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
STK	1	8.02433+02	6.68699+02	7.28500+02	9.51082+02 4.94459+02
2	2.78453-10	3.59542-10	3.87889-10	2.39967-10	4.55590-10
DVBLNC	1	1.00000 00	1.00000 00	1.00000 00	1.00000 00 1.00000 00
DLWC	1	1.00000 00	1.00000 00	1.00000 00	1.00000 00 1.00000 00
CHI	1	0.0	0.0	0.0	0.0
SIGDIP	1	6.08360-02	7.71670-02	7.23510-02	1.77660-01 5.75020-02
2	1.15290 00	1.42450 00	1.28130 00	2.56700 00	1.07690 00
3	-1.28150-01	-1.98740-01	0.0	-3.33770 00	0.0
4	0.0	0.0	0.0	1.96990 00	0.0
5	0.0	0.0	0.0	0.0	0.0
6	1.55150+02	1.49780+02	1.85450+02	2.73160+02	2.89810+02
7	4.20000+02	4.66000+02	5.06000+02	6.47100+02	5.91950+02
SIGPDS	1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
SIGPO	1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0

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PARAMETER VALUES (CONTINUED)

10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
SIGISTE	1	MISSING	4.06950-02	MISSING	MISSING 5.29125-02
2	0.0	5.50903-02	0.0	0.0	-2.18729-02
3	0.0	0.0	0.0	0.0	5.03953-02
4	0.0	0.0	0.0	0.0	0.0
5	MISSING	4.62089+02	MISSING	MISSING	5.92998+02
6	4.00000 00	2.00000 00	4.00000 00	4.00000 00	3.00000 00
7	0.0	2.73000+02	0.0	0.0	2.93138+02
8	1.00000+03	3.22977+02	1.00000+03	1.00000+03	4.04730+02
SIGPDS14	1	MISSING	1.55026-01	MISSING	2.33249-01 1.95136-02
2	0.0	1.58273 00	0.0	1.25043 00	6.74575-01
3	0.0	-9.08578-01	0.0	-6.15491-01	2.45251 00
4	MISSING	4.64107+02	MISSING	6.47108+02	5.92998+02
5	0.0	2.73250+02	0.0	2.73550+02	2.92988+02
6	1.00000+03	3.23127+02	1.00000+03	6.43497+02	4.04680+02
SIGTDEW	1	MISSING	MISSING	MISSING	-2.19860 00 -1.61033 00
2	0.0	0.0	0.0	8.22938-01	6.84443 00
3	0.0	0.0	0.0	-7.02816-01	-1.10168+01
4	0.0	0.0	0.0	9.54507-01	6.14978 00
5	MISSING	MISSING	MISSING	6.47108+02	5.92998+02
6	4.00000 00	4.00000 00	4.00000 00	4.00000 00	4.00000 00
7	0.0	0.0	0.0	2.72640+02	2.93138+02
8	1.00000+03	1.00000+03	1.00000+03	6.47108+02	4.65893+02
VKGRP	1	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING

3	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING
10	MISSING	MISSING	MISSING	MISSING	MISSING
11	MISSING	MISSING	MISSING	MISSING	MISSING
12	MISSING	MISSING	MISSING	MISSING	MISSING
13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING
15	MISSING	MISSING	MISSING	MISSING	MISSING
16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING
21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING
23	MISSING	MISSING	MISSING	MISSING	MISSING
24	MISSING	MISSING	MISSING	MISSING	MISSING
DHFVK	1	MISSING	MISSING	MISSING	MISSING
DGFVK	1	MISSING	MISSING	MISSING	MISSING
DHFVKM	1	MISSING	MISSING	MISSING	MISSING
DGFVKM	1	MISSING	MISSING	MISSING	MISSING
DGCON	1	MISSING	MISSING	MISSING	MISSING
DGCONM	1	MISSING	MISSING	MISSING	MISSING
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PARAMETER VALUES (CONTINUED)

DHCON	1	MISSING	MISSING	MISSING	MISSING	MISSING
DHCONM	1	MISSING	MISSING	MISSING	MISSING	MISSING
DGSUB	1	MISSING	MISSING	MISSING	MISSING	MISSING
DGSUBM	1	MISSING	MISSING	MISSING	MISSING	MISSING
DHSUB	1	MISSING	MISSING	MISSING	MISSING	MISSING
DHSUBM	1	MISSING	MISSING	MISSING	MISSING	MISSING
THRSWT	1 1	1.00000+02	1.00000+02	1.00000+02	1.00000+02	1.00000+02
	2	1.05000+02	1.05000+02	1.05000+02	1.16000+02	1.05000+02
	3	1.01000+02	1.01000+02	1.01000+02	1.01000+02	1.01000+02
	4	1.06000+02	1.06000+02	1.06000+02	1.06000+02	1.06000+02
	5	1.00000+02	1.00000+02	0.0	1.00000+02	1.00000+02
	6	1.00000+02	1.00000+02	1.00000+02	1.00000+02	1.00000+02
	7	1.07000+02	1.07000+02	1.07000+02	1.07000+02	1.07000+02
	8	1.04000+02	1.04000+02	1.04000+02	1.04000+02	0.0
NATOM	1 1	1.00000 00	2.00000 00	3.00000 00	0.0	2.00000 00
	2	2.00000 00	4.00000 00	4.00000 00	2.00000 00	4.00000 00
	3	1.00000 00	1.00000 00	1.00000 00	1.00000 00	2.00000 00
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0
DHAQFM	1	0.0	0.0	0.0	0.0	-4.86087+08
CPLXP1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	MISSING	MISSING	MISSING	MISSING	MISSING
	3	MISSING	MISSING	MISSING	MISSING	MISSING
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
CPLXP2	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	MISSING	MISSING	MISSING	MISSING	MISSING

	3	MISSING	MISSING	MISSING	MISSING	MISSING
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0
PLPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0

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PARAMETER VALUES (CONTINUED)

	10	0.0	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0
	12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
LNVP1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	MISSING	MISSING	MISSING	MISSING	MISSING
	3	MISSING	MISSING	MISSING	MISSING	MISSING
LNVP1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
LOGVP1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
LNPR1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
LOGPR1	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0
LNPR2	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
LOGPR2	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
PLTDEPOL	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
	2	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0

8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
WAGNER25	1	1	-7.57252 00	-7.56196 00	-7.29582 00 -7.89890 00 -8.40162 00
2	3.07862 00	2.74980 00	2.40576 00	1.99929 00	1.34580 00
3	-3.57456 00	-3.13045 00	-3.44816 00	-2.45056 00	-6.15728-01
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PARAMETER VALUES (CONTINUED)

4	-7.53999-01	-1.62538 00	-5.00790-01	-1.88008 00	-5.73556 00
5	1.57519+01	1.53653+01	1.56558+01	1.69098+01	1.55646+01
6	4.18100+02	4.64107+02	5.28000+02	6.47108+02	5.92998+02
7	1.55170+02	1.49750+02	1.85490+02	2.40000+02	2.89686+02
8	4.18100+02	4.64107+02	5.28000+02	6.47108+02	5.92998+02
CPIGHY	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
8	MISSING	MISSING	MISSING	MISSING	MISSING
PSANT	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
PSTDEPOL	1	1	MISSING	4.66986+01	MISSING 4.87508+01 2.99527+01
2	0.0	-4.71680+03	0.0	-6.96676+03	-6.60626+03
3	0.0	-3.06273 00	0.0	-3.00000 00	-3.38346-03
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	7.48970+01	0.0	1.73160+02	2.72550+02
10	1.00000+03	1.49794+02	1.00000+03	2.73160+02	2.89692+02
PSTMLPOL	1	1	MISSING	MISSING	MISSING MISSING MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	8.00000 00	8.00000 00	8.00000 00	8.00000 00	8.00000 00
10	0.0	0.0	0.0	0.0	0.0
11	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPSP01	1	1	MISSING	MISSING	MISSING 3.81518+03 MISSING
2	0.0	0.0	0.0	1.25816+02	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	-8.65820+04	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	5.00000+01	0.0
8	1.00000+03	1.00000+03	1.00000+03	3.00000+02	1.00000+03
DHSFRM	1	0.0	0.0	0.0	-2.92920+08 0.0
CPSPDIP	1	1	1.85480+03	-3.05150+03	MISSING -2.62490+02 -1.14300+04
2	2.31120+02	4.43270+02	0.0	1.40520+02	1.05600+03
3	-1.55420-01	-8.16590-01	0.0	0.0	-5.45200 00
4	0.0	2.41650-04	0.0	0.0	1.06050-02
5	0.0	0.0	0.0	0.0	0.0
6	5.00000+01	5.00000+01	0.0	3.15000 00	4.00000+01
7	1.55150+02	1.49780+02	1.00000+03	2.73150+02	2.89810+02
ASPEN PLUS	PLAT: WIN-X64	VER: 37.0	07/12/2020 PAGE 37		

PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

CPSXP1	1	1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
4	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0		
6	0.0	0.0	0.0	0.0	0.0		
7	0.0	0.0	0.0	0.0	0.0		
8	0.0	0.0	0.0	0.0	0.0		
9	0.0	0.0	0.0	0.0	0.0		
10	0.0	0.0	0.0	0.0	0.0		

CPSXP2	1	1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
4	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0		
6	0.0	0.0	0.0	0.0	0.0		
7	0.0	0.0	0.0	0.0	0.0		
8	0.0	0.0	0.0	0.0	0.0		
9	0.0	0.0	0.0	0.0	0.0		
10	0.0	0.0	0.0	0.0	0.0		

CPSXP3	1	1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
4	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0		
6	0.0	0.0	0.0	0.0	0.0		
7	0.0	0.0	0.0	0.0	0.0		
8	0.0	0.0	0.0	0.0	0.0		
9	0.0	0.0	0.0	0.0	0.0		
10	0.0	0.0	0.0	0.0	0.0		

CPSXP4	1	1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
4	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0		
6	0.0	0.0	0.0	0.0	0.0		
7	0.0	0.0	0.0	0.0	0.0		
8	0.0	0.0	0.0	0.0	0.0		
9	0.0	0.0	0.0	0.0	0.0		
10	0.0	0.0	0.0	0.0	0.0		

CPSXP5	1	1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
4	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0		
6	0.0	0.0	0.0	0.0	0.0		
7	0.0	0.0	0.0	0.0	0.0		
8	0.0	0.0	0.0	0.0	0.0		
9	0.0	0.0	0.0	0.0	0.0		
10	0.0	0.0	0.0	0.0	0.0		

CPSXP6	1	1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
4	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0		

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0

CPSXP7	1	1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING	
4	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0		
6	0.0	0.0	0.0	0.0	0.0		

7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
TREFHS	1	2.98150+02	2.98150+02	2.98150+02	2.98150+02
CPSPO	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPSTMLPO	1 1	MISSING	-2.04653+03	MISSING	-3.22047+02
2	0.0	3.14003+02	0.0	9.39557+01	1.20040+03
3	0.0	3.08584 00	0.0	1.57950 00	-7.69121 00
4	0.0	-4.07361-02	0.0	-1.15406-02	2.37520-02
5	0.0	1.37485-04	0.0	2.44101-05	-2.54862-05
6	5.00000 00	5.00000 00	5.00000 00	5.00000 00	5.00000 00
7	0.0	7.00000 00	0.0	5.00000 00	1.36689+01
8	1.00000+03	1.49750+02	1.00000+03	2.40000+02	2.89691+02
DGSFRM	1	0.0	0.0	0.0	-2.36760+08
VSPOLY	1 1	MISSING	MISSING	MISSING	1.96500-02
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DNSDIP	1 1	3.95780+01	2.76660+01	2.15330+01	5.30300+01
2	-3.18870-02	-2.28850-02	-1.45140-02	-7.84090-03	-9.65700-03
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	6.20600+01	5.99100+01	7.41800+01	2.33150+02	1.15920+02
7	1.55150+02	1.49780+02	1.85450+02	2.73150+02	2.89810+02
VSPOLY	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DNSTMLPO	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	-6.08185-03
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	8.00000 00	8.00000 00	8.00000 00	8.00000 00	2.00000 00
10	0.0	0.0	0.0	0.0	9.01500+01
11	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.94195+02
KSPOLY	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0

4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
UFGRPD	11	MISSING	1.01500+03	1.07000+03	1.30000+03 1.01500+03
2	MISSING	1.00000 00	1.00000 00	1.00000 00	1.00000 00
3	MISSING	1.45000+03	1.45000+03	MISSING	1.95500+03
4	MISSING	1.00000 00	1.00000 00	MISSING	1.00000 00
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING
10	MISSING	MISSING	MISSING	MISSING	MISSING
11	MISSING	MISSING	MISSING	MISSING	MISSING
12	MISSING	MISSING	MISSING	MISSING	MISSING
13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING
15	MISSING	MISSING	MISSING	MISSING	MISSING
16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING
21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING
23	MISSING	MISSING	MISSING	MISSING	MISSING
24	MISSING	MISSING	MISSING	MISSING	MISSING
UFGRPL	11	MISSING	1.01500+03	1.07000+03	1.30000+03 1.01500+03
2	MISSING	1.00000 00	1.00000 00	1.00000 00	1.00000 00
3	MISSING	1.45000+03	1.45000+03	MISSING	1.95500+03
4	MISSING	1.00000 00	1.00000 00	MISSING	1.00000 00
5	MISSING	MISSING	MISSING	MISSING	MISSING
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING
10	MISSING	MISSING	MISSING	MISSING	MISSING
11	MISSING	MISSING	MISSING	MISSING	MISSING
12	MISSING	MISSING	MISSING	MISSING	MISSING
13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING
15	MISSING	MISSING	MISSING	MISSING	MISSING
16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING
21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING
23	MISSING	MISSING	MISSING	MISSING	MISSING
24	MISSING	MISSING	MISSING	MISSING	MISSING
UFGRP	11	MISSING	1.01500+03	1.07000+03	1.30000+03 1.01500+03
2	MISSING	1.00000 00	1.00000 00	1.00000 00	1.00000 00
3	MISSING	1.45000+03	1.45000+03	MISSING	1.95500+03
4	MISSING	1.00000 00	1.00000 00	MISSING	1.00000 00
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING
10	MISSING	MISSING	MISSING	MISSING	MISSING
11	MISSING	MISSING	MISSING	MISSING	MISSING
12	MISSING	MISSING	MISSING	MISSING	MISSING
13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING

15	MISSING	MISSING	MISSING	MISSING	MISSING
16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING
21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING
23	MISSING	MISSING	MISSING	MISSING	MISSING
24	MISSING	MISSING	MISSING	MISSING	MISSING
UFGRP	2 1	MISSING	1.01500+03	1.07000+03	1.30000+03 1.01500+03
	2	MISSING	1.00000 00	1.00000 00	1.00000 00 1.00000 00
	3	MISSING	1.45000+03	1.45000+03	MISSING 1.95500+03
	4	MISSING	1.00000 00	1.00000 00	MISSING 1.00000 00
	5	MISSING	MISSING	MISSING	MISSING
	6	MISSING	MISSING	MISSING	MISSING
	7	MISSING	MISSING	MISSING	MISSING
	8	MISSING	MISSING	MISSING	MISSING
	9	MISSING	MISSING	MISSING	MISSING
	10	MISSING	MISSING	MISSING	MISSING
	11	MISSING	MISSING	MISSING	MISSING
	12	MISSING	MISSING	MISSING	MISSING
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

13	MISSING	MISSING	MISSING	MISSING	MISSING
14	MISSING	MISSING	MISSING	MISSING	MISSING
15	MISSING	MISSING	MISSING	MISSING	MISSING
16	MISSING	MISSING	MISSING	MISSING	MISSING
17	MISSING	MISSING	MISSING	MISSING	MISSING
18	MISSING	MISSING	MISSING	MISSING	MISSING
19	MISSING	MISSING	MISSING	MISSING	MISSING
20	MISSING	MISSING	MISSING	MISSING	MISSING
21	MISSING	MISSING	MISSING	MISSING	MISSING
22	MISSING	MISSING	MISSING	MISSING	MISSING
23	MISSING	MISSING	MISSING	MISSING	MISSING
24	MISSING	MISSING	MISSING	MISSING	MISSING
GMUQR	1	1.20303 00	1.91628 00	2.90178 00	9.20000-01 2.19512 00
GMUQQ	1	1.14960 00	1.79600 00	2.55600 00	1.40000 00 2.07200 00
GMUQQ1	1	1.14960 00	1.79600 00	2.55600 00	1.40000 00 2.07200 00
DHVLDP	1 1	2.95750+07	3.40880+07	6.65990+07	5.66000+07 6.12750+07
	2	9.82960-02	4.33170-02	2.24430 00	6.12040-01 3.68340 00
	3	2.83730-01	2.15020-01	-2.91920 00	-6.25700-01 -6.19310 00
	4	0.0	2.37910-01	1.11130 00	3.98800-01 2.97770 00
	5	0.0	0.0	0.0	0.0
	6	1.55150+02	1.49780+02	1.85450+02	2.73160+02 2.89810+02
	7	4.20000+02	4.66000+02	5.06000+02	6.47100+02 5.91950+02
DHVLB	1	2.30287+07	2.59397+07	2.84005+07	4.06937+07 2.33790+07
DHVLPO	1 1	MISSING	MISSING	MISSING	MISSING MISSING
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0
	12	1.00000+03	1.00000+03	1.00000+03	1.00000+03
DHVLTD	W 1 1	1.72938+01	1.74869+01	1.73766+01	1.79705+01 1.80292+01
	2	5.22261-01	6.76663-01	-1.94834-01	1.12520 00 4.20198 00
	3	-4.55150-01	-5.73696-01	7.32722-01	-1.50638 00 -6.77385 00
	4	3.36924-01	3.32864-01	-1.96282-01	8.05450-01 2.80970 00
	5	4.18100+02	4.64107+02	5.28000+02	6.47108+02 5.92998+02
	6	4.00000 00	4.00000 00	4.00000 00	4.00000 00 4.00000 00
	7	1.55170+02	1.49750+02	1.85490+02	2.45000+02 2.89686+02
	8	4.18100+02	4.64107+02	5.10163+02	6.47108+02 5.92998+02
MUVDIP	1 1	1.59480-05	1.97030-05	6.52300-07	1.70960-08 1.56400-08

2	2.15160-01	1.76460-01	5.79000-01	1.11460 00	1.07800 00
3	1.15110+03	1.56460+03	4.10800+02	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	1.55150+02	1.49780+02	1.85450+02	2.73160+02	2.89810+02
7	1.00000+03	1.00000+03	1.00000+03	1.07315+03	1.00000+03
MUVPDS	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03

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PARAMETER VALUES (CONTINUED)

MUVCB	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
3	0.0	0.0	0.0	0.0	0.0	
4	0.0	0.0	0.0	0.0	0.0	
5	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03	
MUVSUT	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	0.0	
4	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03	
MUVPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	0.0	
4	0.0	0.0	0.0	0.0	0.0	
5	0.0	0.0	0.0	0.0	0.0	
6	0.0	0.0	0.0	0.0	0.0	
7	0.0	0.0	0.0	0.0	0.0	
8	0.0	0.0	0.0	0.0	0.0	
9	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	
11	0.0	0.0	0.0	0.0	0.0	
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03	
MUVTMLPO	1 1	-4.76582-07	-5.67880-07	-4.31281-07	-3.05557-07	-1.24715-05
2	4.47880-08	4.03097-08	3.00538-08	2.87489-08	1.02577-07	
3	5.08896-14	-1.23305-12	-3.05623-13	1.67256-11	-1.48557-10	
4	-8.45396-15	-5.23712-15	-3.33123-15	-7.75682-15	8.45779-14	
5	4.00000 00	4.00000 00	4.00000 00	4.00000 00	4.00000 00	
6	2.60000+02	3.00000+02	3.30000+02	3.25736+02	3.07142+02	
7	6.20000+02	6.90000+02	7.90000+02	1.13971+03	8.80000+02	
KVDIP	1 1	5.22010-06	1.09430-07	2.40980-02	6.20410-06	2.41480 00
2	1.41700 00	2.02790 00	3.28500-01	1.39730 00	-2.08670-02	
3	0.0	0.0	1.32530+03	0.0	5.94090-05	
4	0.0	0.0	5.77830+05	0.0	-5.47180-08	
5	0.0	0.0	0.0	0.0	0.0	
6	2.53850+02	2.94150+02	3.25840+02	2.73160+02	3.91050+02	
7	1.00000+03	1.00000+03	1.00000+03	1.07315+03	4.58150+02	
KVPDS	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	0.0	
4	0.0	0.0	0.0	0.0	0.0	
5	0.0	0.0	0.0	0.0	0.0	
6	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03	
KVPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0	
3	0.0	0.0	0.0	0.0	0.0	
4	0.0	0.0	0.0	0.0	0.0	
5	0.0	0.0	0.0	0.0	0.0	
6	0.0	0.0	0.0	0.0	0.0	
7	0.0	0.0	0.0	0.0	0.0	
8	0.0	0.0	0.0	0.0	0.0	
9	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	
11	0.0	0.0	0.0	0.0	0.0	
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03	
CPLPO	1 1	MISSING	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0	

PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0
12	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPLIKC	1 1	MISSING	MISSING	MISSING	MISSING
2	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0
7	1.00000+03	1.00000+03	1.00000+03	1.00000+03	1.00000+03
CPLTDECS	1 1	1.37243+05	-2.52663+05	1.31499+05	8.54450+04
2	-6.01875+02	3.54573+03	-3.73177+02	2.90437+01	-8.03817+02
3	1.73807 00	-1.23452+01	1.37464 00	-5.24915-01	3.04911 00
4	-1.72901-03	1.47270-02	-1.30837-03	9.82826-04	-3.10520-03
5	4.61569+03	9.35506+02	4.77036+03	1.00206+03	6.51680+03
6	4.18100+02	4.62089+02	5.28000+02	6.47108+02	5.92998+02
7	4.00000 00	4.00000 00	4.00000 00	4.00000 00	4.00000 00
8	1.55170+02	1.49750+02	1.85490+02	2.73160+02	2.89686+02
9	4.09738+02	4.50000+02	5.17440+02	6.30000+02	5.80000+02
CPLTMLPO	1 1	MISSING	MISSING	MISSING	8.74057+04
2	0.0	0.0	0.0	-4.66538+01	0.0
3	0.0	0.0	0.0	-5.97946-02	0.0
4	0.0	0.0	0.0	2.75074-04	0.0
5	0.0	0.0	0.0	0.0	0.0
6	5.00000 00	5.00000 00	5.00000 00	5.00000 00	5.00000 00
7	0.0	0.0	0.0	2.73160+02	0.0
8	1.00000+03	1.00000+03	1.00000+03	3.73150+02	1.00000+03
KVTMLPO	1 1	9.19704-03	4.21220-02	1.60155-04	5.01966-03
2	-2.32423-05	-2.70638-04	-8.55360-07	5.67690-06	9.76380-04
3	2.33226-07	6.46762-07	1.81084-07	1.45408-07	-1.23714-06
4	-1.14272-10	-2.57506-10	-9.24039-11	-6.30525-11	5.37073-10
5	4.00000 00	4.00000 00	4.00000 00	4.00000 00	4.00000 00
6	2.60000+02	3.04034+02	3.30000+02	3.25986+02	4.00000+02
7	6.20000+02	6.90000+02	7.90000+02	9.97678+02	8.80000+02
VLBROC	1 1	8.51000-02	1.54000-01	1.97000-01	5.59472-02
2	0.0	0.0	0.0	0.0	0.0

PARAMETER COMPONENTS

NAME/SET/EL AC-ACRY HIDROQUI

ZC	1	2.30000-01	2.46000-01
TC	1	6.15000+02	8.38800+02
PC	1	5.66000+06	5.89100+06
MW	1	7.20636+01	1.10112+02
PLXANT	1 1	4.67450+01	1.12050+02
2	-6.58710+03	-1.41820+04	
3	0.0	0.0	
4	0.0	0.0	
5	-3.22080 00	-1.18860+01	

PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

6	5.22530-07	1.34850-18
7	2.00000 00	6.00000 00
8	2.86150+02	4.43700+02
9	6.15000+02	8.38800+02
TB	1	4.14150+02
CPIG	1 1	MISSING

2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 1.00000+03 1.00000+03
 9 MISSING MISSING
 10 MISSING MISSING
 11 MISSING MISSING
 DHVLWT 1 1 MISSING MISSING
 2 MISSING MISSING
 3 3.80000-01 3.80000-01
 4 0.0 0.0
 5 0.0 0.0
 OMEGA 1 5.38324-01 4.85839-01
 DHFORM 1 -3.37060+08 -2.69400+08
 DGFORM 1 -2.86900+08 -1.85800+08
 VLSTD 1 6.89270-02 8.36954-02
 SG 1 1.04813 00 1.31894 00
 API 1 3.50186 00 -2.42168+01
 WATSOL 1 1 1.84762 00 1.73348 00
 2 -2.27880+03 -2.13565+03
 3 0.0 0.0
 4 0.0 0.0
 5 8.94480+02 8.77615+02
 CHARGE 1 0.0 0.0
 HIGPY 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 1.00000+03 1.00000+03
 PSEUDO 1 MISSING MISSING
 CPIGDP 1 1 6.05900+04 8.98300+04
 2 1.37030+05 1.78410+05
 3 1.64750+03 7.19470+02
 4 1.04460+05 7.31410+04
 5 7.51490+02 2.48950+03
 6 2.50000+02 2.98150+02
 7 1.50000+03 1.50000+03
 ATOMNO 1 1 6.00000 00 6.00000 00
 2 1.00000 00 1.00000 00
 3 8.00000 00 8.00000 00
 4 0.0 0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 0.0 0.0
 NOATOM 1 1 3.00000 00 6.00000 00
 2 4.00000 00 6.00000 00
 3 2.00000 00 2.00000 00
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 0.0 0.0
 CPIXP1 1 1 MISSING MISSING

2	MISSING	MISSING
3	MISSING	MISSING
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0

CPIXP2 1 1 MISSING MISSING

2	MISSING	MISSING
3	MISSING	MISSING
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0

CPIXP3 1 1 MISSING MISSING

2	MISSING	MISSING
3	MISSING	MISSING
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0

TFP 1 MISSING MISSING

S025E 1 0.0 0.0

WAGNER 1 1 MISSING MISSING

2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	1.00000+03	1.00000+03

DHVLDS 1 1 MISSING MISSING

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	1.00000+03	1.00000+03

CPIGDS 1 1 MISSING MISSING

2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	3.00000+03	3.00000+03

CPIGYM 1 1 MISSING MISSING

2	0.0	0.0
3	0.0	0.0
4	1.00000 00	1.00000 00
5	0.0	0.0
6	2.00000+03	2.00000+03

PDSNEL 1 1 MISSING MISSING

2	MISSING	MISSING
3	MISSING	MISSING

HCTYPE 1 0.0 0.0

VC 1 2.08000-01 2.91000-01

HCSOL 1 1 MISSING MISSING

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2 MISSING MISSING
3 0.0 0.0
4 0.0 0.0
5 1.00000+03 1.00000+03
FREEZEPT 1 2.86150+02 4.43700+02
CPIAPI 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
CPIGPO 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
11 0.0 0.0
12 1.00000+03 1.00000+03
CPIALEE 1 1 4.16451+04 3.47130+04
2 1.34231+05 2.42315+05
3 7.87237+02 7.07037+02
4 4.60961+04 9.66615+04
5 3.28836+02 2.73073+02
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

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6 -3.42024+02 -3.94109+02
7 8.31447 00 8.31447 00
8 5.00000+01 5.00000+01
9 1.00000+03 1.00000+03
CPITMLPO 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 6.00000 00 6.00000 00
8 0.0 0.0
9 1.00000+03 1.00000+03
CPIWEOS 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
11 8.31447 00 8.31447 00
12 1.00000 00 1.00000 00
13 1.00000+03 1.00000+03
CMPCLASS 1 4.50000+02 4.14000+02
ZWITTER 1 0.0 0.0
TPT 1 2.86150+02 4.43700+02
HFUS 1 1.11300+07 2.71000+07
DCPLS 1 3.04372+04 5.34103+04
PSXANT 1 1 -6.17900+01 3.62100+01
2 1.84480+04 -1.26760+04
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 2.73150+02 3.41000+02

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9 2.76650+02 4.43700+02
 HCOM 1 -1.32717+09 -2.72200+09
 RKTZRA 1 2.44580-01 2.45480-01
 VCRKT 1 2.08000-01 2.91000-01
 RACKET 1 1 MISSING MISSING
 2 MISSING MISSING
 3 0.0 0.0
 4 0.0 0.0
 5 1.00000+03 1.00000+03
 DNLDIP 1 1 1.24140 00 8.44690-01
 2 2.58220-01 2.45510-01
 3 6.15000+02 8.38800+02
 4 3.07010-01 2.85710-01
 5 0.0 0.0
 6 2.86150+02 4.43700+02
 7 6.15000+02 8.38800+02
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

DNLPPS 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 1.00000+03 1.00000+03
 RHOM 1 0.0 0.0
 DNLEXSAT 1 1 4.66339 00 3.47627 00
 2 1.48025+01 7.90492 00
 3 -2.30344+01 2.34063 00
 4 7.94614+01 6.09029-01
 5 -8.03558+01 -5.49827-01
 6 0.0 0.0
 7 0.0 0.0
 8 6.08000+02 8.27800+02
 9 4.00000 00 4.00000 00
 10 2.86710+02 4.46100+02
 11 6.08000+02 8.27800+02
 DNLTMLPO 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 4.00000 00 4.00000 00
 6 0.0 0.0
 7 1.00000+03 1.00000+03
 DNLRAK 1 1 MISSING MISSING
 2 0.0 0.0
 3 MISSING MISSING
 4 0.0 0.0
 5 0.0 0.0
 6 1.00000+03 1.00000+03
 VLPO 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 0.0 0.0
 11 0.0 0.0
 12 1.00000+03 1.00000+03
 DNLCOSTD 1 1 1.95148-01 2.84440-01
 2 1.00515-01 4.78254-01
 3 6.06000+02 8.28000+02
 4 2.92988+02 4.70000+02
 5 5.75700+02 7.86600+02
 MULAND 1 1 MISSING MISSING
 2 0.0 0.0

3 0.0 0.0
4 0.0 0.0
5 5.00000+02 5.00000+02
MULDIP 1 1 -2.81200+01 -1.01850+02
2 2.28020+03 8.85110+03
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

3 2.39560 00 1.23170+01
4 0.0 0.0
5 0.0 0.0
6 2.86150+02 4.43700+02
7 4.60000+02 5.59200+02
TRNSWT 1 1 1.01000+02 1.01000+02
2 1.02000+02 1.02000+02
3 1.00000+02 1.00000+02
4 1.02000+02 1.02000+02
5 1.06000+02 1.06000+02
MULPDS 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 MISSING MISSING
6 0.0 0.0
7 1.00000+03 1.00000+03

MULIKC 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 1.00000+03 1.00000+03

MULPO 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
11 0.0 0.0
12 1.00000+03 1.00000+03

MULNVE 1 1 -1.28480+01 MISSING
2 2.87751+03 0.0
3 -5.15854+05 0.0
4 6.23105+07 0.0
5 2.90000+02 0.0
6 6.00000+02 1.00000+03

MULPPDS9 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 1.00000+03 1.00000+03

KLDIP 1 1 2.44100-01 1.81100-01
2 -2.90400-04 -9.51980-05
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 2.86150+02 4.43700+02
7 4.84500+02 5.59200+02

KLPDS 1 1 MISSING MISSING

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

2 0.0 0.0

3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	1.00000+03	1.00000+03
KLPO	1 1	MISSING MISSING
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0
11	0.0	0.0
12	1.00000+03	1.00000+03
KLTMLPO	1 1	7.51432-01 2.04217-01
2	-4.01340-03	-1.61812-04
3	8.86002-06	4.63740-08
4	-6.87953-09	1.67760-11
5	4.00000 00	4.00000 00
6	3.03143+02	4.50000+02
7	5.40000+02	7.40000+02
KLPPDS8	1 1	MISSING MISSING
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	MISSING	MISSING
9	7.00000 00	7.00000 00
10	0.0	0.0
11	1.00000+03	1.00000+03
VB	1	7.96231-02 1.04173-01
MUP	1	4.61690-25 4.43677-25
LJPARG	1 1	MISSING MISSING
2	MISSING	MISSING
STKPAR	1 1	4.98688+02 MISSING
2	4.98226-10	MISSING
DVBLNC	1	1.00000 00 1.00000 00
DLWC	1	1.00000 00 1.00000 00
CHI	1	0.0 0.0
SIGDIP	1 1	6.41000-02 9.90110-02
2	1.25140 00	1.24940 00
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	2.86150+02	4.43700+02
7	6.15000+02	8.38800+02
SIGPDS	1 1	MISSING MISSING
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

5	1.00000+03	1.00000+03
SIGPO	1 1	MISSING MISSING
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0
11	0.0	0.0

12 1.00000+03 1.00000+03
 SIGISTE 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 MISSING MISSING
 6 4.00000 00 4.00000 00
 7 0.0 0.0
 8 1.00000+03 1.00000+03
 SIGPDS14 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 MISSING MISSING
 5 0.0 0.0
 6 1.00000+03 1.00000+03
 SIGTDEW 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 MISSING MISSING
 6 4.00000 00 4.00000 00
 7 0.0 0.0
 8 1.00000+03 1.00000+03
 VKGRP 1 1 MISSING MISSING
 2 MISSING MISSING
 3 MISSING MISSING
 4 MISSING MISSING
 5 MISSING MISSING
 6 MISSING MISSING
 7 MISSING MISSING
 8 MISSING MISSING
 9 MISSING MISSING
 10 MISSING MISSING
 11 MISSING MISSING
 12 MISSING MISSING
 13 MISSING MISSING
 14 MISSING MISSING
 15 MISSING MISSING
 16 MISSING MISSING
 17 MISSING MISSING
 18 MISSING MISSING
 19 MISSING MISSING
 20 MISSING MISSING

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

21 MISSING MISSING
 22 MISSING MISSING
 23 MISSING MISSING
 24 MISSING MISSING
 DHFVK 1 MISSING MISSING
 DGFVK 1 MISSING MISSING
 DHFVKM 1 MISSING MISSING
 DGFVKM 1 MISSING MISSING
 DGCON 1 MISSING MISSING
 DGCONM 1 MISSING MISSING
 DHCON 1 MISSING MISSING
 DHCONM 1 MISSING MISSING
 DGSUB 1 MISSING MISSING
 DGSUBM 1 MISSING MISSING
 DHSUB 1 MISSING MISSING
 DHSUBM 1 MISSING MISSING
 THRSWT 1 1 1.00000+02 1.00000+02
 2 1.05000+02 1.05000+02
 3 1.01000+02 1.01000+02
 4 1.06000+02 1.06000+02
 5 1.02000+02 1.00000+02
 6 1.00000+02 1.00000+02
 7 1.07000+02 1.07000+02

8 0.0 1.04000+02
 NATOM 1 1 3.00000 00 6.00000 00
 2 4.00000 00 6.00000 00
 3 2.00000 00 2.00000 00
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 0.0 0.0
 11 0.0 0.0

DHAQFM 1 0.0 0.0
 CPLXP1 1 1 MISSING MISSING
 2 MISSING MISSING
 3 MISSING MISSING
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 0.0 0.0

CPLXP2 1 1 MISSING MISSING
 2 MISSING MISSING
 3 MISSING MISSING
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

10 0.0 0.0
 PLPO 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 0.0 0.0
 11 0.0 0.0

12 1.00000+03 1.00000+03
 LNVPEQ 1 1 MISSING MISSING
 2 MISSING MISSING
 3 MISSING MISSING

LNVP1 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0

LOGVP1 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0

LNPR1 1 1 MISSING MISSING
 2 0.0 0.0

3	0.0	0.0	
4	0.0	0.0	
5	0.0	0.0	
6	0.0	0.0	
7	0.0	0.0	
8	0.0	0.0	
LOGPR1	1 1	MISSING	MISSING
2	0.0	0.0	
3	0.0	0.0	
4	0.0	0.0	
5	0.0	0.0	
6	0.0	0.0	
7	0.0	0.0	
8	0.0	0.0	
LNPR2	1 1	MISSING	MISSING
2	0.0	0.0	
LOGPR2	1 1	MISSING	MISSING
2	0.0	0.0	
PLTDEPOL	1 1	4.33537+01	MISSING
2	-7.32068+03	0.0	
3	-1.77795	00	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

4	-8.04706-03	0.0	
5	0.0	0.0	
6	0.0	0.0	
7	0.0	0.0	
8	0.0	0.0	
9	2.86710+02	0.0	
10	4.15066+02	1.00000+03	
WAGNER25	1 1	-1.14789+01	-8.95591 00
2	7.93052	00	2.53997 00
3	-8.90685	00	-5.46362 00
4	0.0	-5.93964	00
5	1.55089+01	1.56480+01	
6	6.06000+02	8.28000+02	
7	2.86710+02	4.45700+02	
8	6.06000+02	8.28000+02	
CPIGHY	1 1	MISSING	MISSING
2	0.0	0.0	
3	0.0	0.0	
4	0.0	0.0	
5	0.0	0.0	
6	0.0	0.0	
7	1.00000+03	1.00000+03	
8	MISSING	MISSING	
PSANT	1 1	MISSING	MISSING
2	MISSING	MISSING	
3	0.0	0.0	
4	0.0	0.0	
5	1.00000+03	1.00000+03	
PSTDEPOL	1 1	4.35971+01	6.68244+01
2	-6.10087+03	-1.41380+04	
3	-3.00000	00	-4.48532 00
4	0.0	0.0	
5	0.0	0.0	
6	0.0	0.0	
7	0.0	0.0	
8	0.0	0.0	
9	1.86710+02	3.18400+02	
10	2.86710+02	4.45700+02	
PSTMLPOL	1 1	MISSING	MISSING
2	0.0	0.0	
3	0.0	0.0	
4	0.0	0.0	
5	0.0	0.0	
6	0.0	0.0	
7	0.0	0.0	

8 0.0 0.0
9 8.00000 00 8.00000 00
10 0.0 0.0
11 1.00000+03 1.00000+03
CPSP01 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

7 0.0 0.0
8 1.00000+03 1.00000+03
DHSFRM 1 0.0 -3.64500+08
CPSDIP 1 1 1.25000+03 1.19770+04
2 7.92670-01 3.67750+02
3 0.0 1.48230-01
4 0.0 0.0
5 0.0 0.0
6 5.00000+01 5.00000+01
7 2.86150+02 4.43700+02
CPSXP1 1 1 MISSING MISSING
2 MISSING MISSING
3 MISSING MISSING
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
CPSXP2 1 1 MISSING MISSING
2 MISSING MISSING
3 MISSING MISSING
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
CPSXP3 1 1 MISSING MISSING
2 MISSING MISSING
3 MISSING MISSING
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
CPSXP4 1 1 MISSING MISSING
2 MISSING MISSING
3 MISSING MISSING
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
CPSXP5 1 1 MISSING MISSING
2 MISSING MISSING
3 MISSING MISSING
4 0.0 0.0
5 0.0 0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0
CPSXP6	1 1	MISSING MISSING
2	MISSING	MISSING
3	MISSING	MISSING
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0
CPSXP7	1 1	MISSING MISSING
2	MISSING	MISSING
3	MISSING	MISSING
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0
TREFHS	1	2.98150+02 2.98150+02
CPSP0	1 1	MISSING MISSING
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0
11	0.0	0.0
12	1.00000+03	1.00000+03
CPSTMLPO	1 1	-5.97362+03 7.17530+03
2	7.50668+02	3.88523+02
3	-1.72146 00	3.43127-01
4	-2.33153-03	-8.51905-04
5	1.51054-05	7.14293-07
6	5.00000 00	5.00000 00
7	9.00000 00	2.81000+01
8	2.86710+02	4.45700+02
DGSFRM	1	0.0 -2.18000+08
VSPLY	1 1	MISSING MISSING
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	1.00000+03	1.00000+03
DNSDIP	1 1	1.79840+01 1.25440+01
ASPEN PLUS	PLAT: WIN-X64	VER: 37.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

2	0.0	-1.58630-03
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	1.77480+02
7	0.0	4.43700+02
VSPO	1 1	MISSING MISSING

2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0
11	0.0	0.0
12	1.00000+03	1.00000+03
DNSTMLPO 1 1 MISSING 1.21663+01		
2	0.0	-1.23245-04
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	8.00000 00	2.00000 00
10	0.0	2.73150+02
11	1.00000+03	4.44642+02
KSPOLY 1 1 MISSING MISSING		
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	1.00000+03	1.00000+03
UFGRPD 1 1 1.07000+03 1.10500+03		
2	1.00000 00	4.00000 00
3	1.95500+03	1.35000+03
4	1.00000 00	2.00000 00
5	MISSING	MISSING
6	MISSING	MISSING
7	MISSING	MISSING
8	MISSING	MISSING
9	MISSING	MISSING
10	MISSING	MISSING
11	MISSING	MISSING
12	MISSING	MISSING
13	MISSING	MISSING
14	MISSING	MISSING
15	MISSING	MISSING
16	MISSING	MISSING
17	MISSING	MISSING
18	MISSING	MISSING
19	MISSING	MISSING
ASPEN PLUS PLAT: WIN-X64 VER: 37.0		

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

20	MISSING	MISSING
21	MISSING	MISSING
22	MISSING	MISSING
23	MISSING	MISSING
24	MISSING	MISSING
UFGRPL 1 1 1.07000+03 1.10500+03		
2	1.00000 00	4.00000 00
3	1.95500+03	1.10000+03
4	1.00000 00	2.00000 00
5	MISSING	1.20000+03
6	MISSING	2.00000 00
7	MISSING	MISSING
8	MISSING	MISSING
9	MISSING	MISSING
10	MISSING	MISSING
11	MISSING	MISSING
12	MISSING	MISSING
13	MISSING	MISSING

14 MISSING MISSING
15 MISSING MISSING
16 MISSING MISSING
17 MISSING MISSING
18 MISSING MISSING
19 MISSING MISSING
20 MISSING MISSING
21 MISSING MISSING
22 MISSING MISSING
23 MISSING MISSING
24 MISSING MISSING

UFGRP 1 1 1.07000+03 1.10500+03

2 1.00000 00 4.00000 00
3 1.95500+03 1.35000+03
4 1.00000 00 2.00000 00
5 MISSING MISSING
6 MISSING MISSING
7 MISSING MISSING
8 MISSING MISSING
9 MISSING MISSING
10 MISSING MISSING
11 MISSING MISSING
12 MISSING MISSING
13 MISSING MISSING
14 MISSING MISSING
15 MISSING MISSING
16 MISSING MISSING
17 MISSING MISSING
18 MISSING MISSING
19 MISSING MISSING
20 MISSING MISSING
21 MISSING MISSING
22 MISSING MISSING
23 MISSING MISSING
24 MISSING MISSING

UFGRP 2 1 1.07000+03 1.10500+03

2 1.00000 00 4.00000 00

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

3 1.95500+03 1.35000+03
4 1.00000 00 2.00000 00
5 MISSING MISSING
6 MISSING MISSING
7 MISSING MISSING
8 MISSING MISSING
9 MISSING MISSING
10 MISSING MISSING
11 MISSING MISSING
12 MISSING MISSING
13 MISSING MISSING
14 MISSING MISSING
15 MISSING MISSING
16 MISSING MISSING
17 MISSING MISSING
18 MISSING MISSING
19 MISSING MISSING
20 MISSING MISSING
21 MISSING MISSING
22 MISSING MISSING
23 MISSING MISSING
24 MISSING MISSING

GMUQR 1 2.64667 00 3.91562 00

GMUQQ 1 2.40000 00 3.00800 00

GMUQQ1 1 2.40000 00 3.00800 00

DHVLDP 1 1 4.37560+07 6.92730+07

2 2.25710 00 -1.31440 00
3 -4.51160 00 3.07500 00
4 2.57380 00 -1.43390 00

5 0.0 0.0
 6 2.86150+02 4.43700+02
 7 6.15000+02 8.38800+02
 DHVLB 1 2.84045+07 6.21810+07
 DHVLPO 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 0.0 0.0
 11 0.0 0.0
 12 1.00000+03 1.00000+03
 DHVLTDEW 1 1 2.03229+01 1.82972+01
 2 1.07877+01 -2.60096-01
 3 -1.57077+01 1.27280 00
 4 5.80716 00 -6.26789-01
 5 6.08000+02 8.28000+02
 6 4.00000 00 4.00000 00
 7 2.86710+02 4.10000+02
 8 4.88020+02 7.97050+02
 MUVDIP 1 1 1.71540-07 6.25210-05
 2 7.41800-01 9.65350-02
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

3 1.38400+02 4.51710+03
 4 0.0 0.0
 5 0.0 0.0
 6 2.86150+02 4.43700+02
 7 1.00000+03 1.00000+03
 MUVPDS 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 1.00000+03 1.00000+03
 MUVCEB 1 1 MISSING MISSING
 2 MISSING MISSING
 3 0.0 0.0
 4 0.0 0.0
 5 1.00000+03 1.00000+03
 MUVSUT 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 1.00000+03 1.00000+03
 MUVPO 1 1 MISSING MISSING
 2 0.0 0.0
 3 0.0 0.0
 4 0.0 0.0
 5 0.0 0.0
 6 0.0 0.0
 7 0.0 0.0
 8 0.0 0.0
 9 0.0 0.0
 10 0.0 0.0
 11 0.0 0.0
 12 1.00000+03 1.00000+03
 MUVTMLPO 1 1 -7.54326-07 -7.87328-07
 2 3.24899-08 2.46858-08
 3 -1.95455-12 -1.11812-12
 4 -1.81792-15 -7.24830-16
 5 4.00000 00 4.00000 00
 6 4.20000+02 5.70000+02
 7 9.00000+02 1.24000+03
 KVDIP 1 1 9.26500-04 3.05190-06
 2 7.03500-01 1.44300 00


```

3 6.27580+02 0.0
4 1.12460+05 0.0
5 0.0 0.0
6 4.14150+02 5.59200+02
7 1.00000+03 1.00000+03
KVPDS 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 1.00000+03 1.00000+03
KVPO 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0

```

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

```

5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
11 0.0 0.0
12 1.00000+03 1.00000+03
CPLPO 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 0.0 0.0
8 0.0 0.0
9 0.0 0.0
10 0.0 0.0
11 0.0 0.0
12 1.00000+03 1.00000+03
CPLIKC 1 1 MISSING MISSING
2 0.0 0.0
3 0.0 0.0
4 0.0 0.0
5 0.0 0.0
6 0.0 0.0
7 1.00000+03 1.00000+03
CPLTDECS 1 1 MISSING 6.38094+04
2 0.0 7.00975+02
3 0.0 -8.09732-01
4 0.0 3.40024-04
5 0.0 5.87641+03
6 MISSING 8.28000+02
7 4.00000 00 4.00000 00
8 0.0 4.45700+02
9 1.00000+03 8.10000+02
CPLTMLPO 1 1 3.52544+05 1.76521+05
2 -2.04414+03 1.84024+02
3 6.13989 00 -2.87249-06
4 -5.70420-03 0.0
5 0.0 0.0
6 5.00000 00 5.00000 00
7 2.86710+02 4.45700+02
8 3.30000+02 4.73153+02
KVTMLPO 1 1 -3.47165-03 -9.60325-03
2 2.36457-05 4.88895-05
3 9.62351-08 3.16835-08
4 -4.51175-11 -1.18471-11
5 4.00000 00 4.00000 00
6 4.20000+02 5.70000+02
7 9.00000+02 1.24000+03

```

PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

TABLE FOR RKT KIJ SET = 1 ELEMENT = 1

	N2	ARGON	O2	CO2	PROPYLEN
N2	MISSING	MISSING	MISSING	MISSING	MISSING
ARGON	MISSING	MISSING	MISSING	MISSING	MISSING
O2	MISSING	MISSING	MISSING	MISSING	MISSING
CO2	MISSING	MISSING	MISSING	MISSING	MISSING
PROPYLEN	MISSING	MISSING	MISSING	MISSING	MISSING
FORMA-01	MISSING	MISSING	MISSING	MISSING	MISSING
ACETALD	MISSING	MISSING	MISSING	MISSING	MISSING
ACROL	MISSING	MISSING	MISSING	MISSING	MISSING
H2O	MISSING	MISSING	MISSING	MISSING	MISSING
AC-ACET	MISSING	MISSING	MISSING	MISSING	MISSING
AC-ACRY	MISSING	MISSING	MISSING	MISSING	MISSING
HIDROQUI	MISSING	MISSING	MISSING	MISSING	MISSING
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	MISSING	MISSING	MISSING	MISSING	MISSING
ARGON	MISSING	MISSING	MISSING	MISSING	MISSING
O2	MISSING	MISSING	MISSING	MISSING	MISSING
CO2	MISSING	MISSING	MISSING	MISSING	MISSING
PROPYLEN	MISSING	MISSING	MISSING	MISSING	MISSING
FORMA-01	MISSING	MISSING	MISSING	MISSING	MISSING
ACETALD	MISSING	MISSING	MISSING	MISSING	MISSING
ACROL	MISSING	MISSING	MISSING	MISSING	MISSING
H2O	MISSING	MISSING	MISSING	MISSING	MISSING
AC-ACET	MISSING	MISSING	MISSING	MISSING	MISSING
AC-ACRY	MISSING	MISSING	MISSING	MISSING	MISSING
HIDROQUI	MISSING	MISSING	MISSING	MISSING	MISSING
	AC-ACRY	HIDROQUI			
N2	MISSING	MISSING			
ARGON	MISSING	MISSING			
O2	MISSING	MISSING			
CO2	MISSING	MISSING			
PROPYLEN	MISSING	MISSING			
FORMA-01	MISSING	MISSING			
ACETALD	MISSING	MISSING			
ACROL	MISSING	MISSING			
H2O	MISSING	MISSING			
AC-ACET	MISSING	MISSING			
AC-ACRY	MISSING	MISSING			
HIDROQUI	MISSING	MISSING			

TABLE FOR AND KIJ SET = 1 ELEMENT = 1

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0

PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

	HIDROQUI	0.0	0.0	0.0	0.0
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET

N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

AC-ACRY HIDROQUI

N2	0.0	0.0
ARGON	0.0	0.0
O2	0.0	0.0
CO2	0.0	0.0
PROPYLEN	0.0	0.0
FORMA-01	0.0	0.0
ACETALD	0.0	0.0
ACROL	0.0	0.0
H2O	0.0	0.0
AC-ACET	0.0	0.0
AC-ACRY	0.0	0.0
HIDROQUI	0.0	0.0

TABLE FOR ANDKIJ SET = 1 ELEMENT = 2

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

FORMA-01 ACETALD ACROL H2O AC-ACET

N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

AC-ACRY HIDROQUI

N2	0.0	0.0
ARGON	0.0	0.0
O2	0.0	0.0
CO2	0.0	0.0
PROPYLEN	0.0	0.0
FORMA-01	0.0	0.0
ACETALD	0.0	0.0
ACROL	0.0	0.0
H2O	0.0	0.0
AC-ACET	0.0	0.0
AC-ACRY	0.0	0.0
HIDROQUI	0.0	0.0

TABLE FOR ANDMIJ SET = 1 ELEMENT = 1

N2	ARGON	O2	CO2	PROPYLEN	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI				
N2	0.0	0.0			
ARGON	0.0	0.0			
O2	0.0	0.0			
CO2	0.0	0.0			
PROPYLEN	0.0	0.0			
FORMA-01	0.0	0.0			
ACETALD	0.0	0.0			
ACROL	0.0	0.0			
H2O	0.0	0.0			
AC-ACET	0.0	0.0			
AC-ACRY	0.0	0.0			
HIDROQUI	0.0	0.0			

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

TABLE FOR ANDMIJ SET = 1 ELEMENT = 2

N2	ARGON	O2	CO2	PROPYLEN	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0

AC-ACRY	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI			
N2	0.0	0.0		
ARGON	0.0	0.0		
O2	0.0	0.0		
CO2	0.0	0.0		
PROPYLEN	0.0	0.0		
FORMA-01	0.0	0.0		
ACETALD	0.0	0.0		
ACROL	0.0	0.0		
H2O	0.0	0.0		
AC-ACET	0.0	0.0		
AC-ACRY	0.0	0.0		
HIDROQUI	0.0	0.0		

TABLE FOR MLQKIJ SET = 1 ELEMENT = 1

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI				
N2	0.0	0.0			
ARGON	0.0	0.0			
O2	0.0	0.0			
CO2	0.0	0.0			
PROPYLEN	0.0	0.0			
FORMA-01	0.0	0.0			
ACETALD	0.0	0.0			
ACROL	0.0	0.0			
H2O	0.0	0.0			
AC-ACET	0.0	0.0			
AC-ACRY	0.0	0.0			
HIDROQUI	0.0	0.0			

TABLE FOR MUKIJ SET = 1 ELEMENT = 1

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0

ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

AC-ACRY	HIDROQUI
N2	0.0 0.0
ARGON	0.0 0.0
O2	0.0 0.0
CO2	0.0 0.0
PROPYLEN	0.0 0.0
FORMA-01	0.0 0.0
ACETALD	0.0 0.0
ACROL	0.0 0.0
H2O	0.0 0.0
AC-ACET	0.0 0.0
AC-ACRY	0.0 0.0
HIDROQUI	0.0 0.0

TABLE FOR MUKIJ SET = 1 ELEMENT = 2

N2	ARGON	O2	CO2	PROPYLEN
N2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ARGON	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
O2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
CO2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
PROPYLEN	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
FORMA-01	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ACETALD	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ACROL	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
H2O	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
AC-ACET	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
AC-ACRY	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
HIDROQUI	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	0.0 0.0	0.0 0.0	0.0 0.0	
ARGON	0.0 0.0	0.0 0.0	0.0 0.0	
O2	0.0 0.0	0.0 0.0	0.0 0.0	
CO2	0.0 0.0	0.0 0.0	0.0 0.0	
PROPYLEN	0.0 0.0	0.0 0.0	0.0 0.0	
FORMA-01	0.0 0.0	0.0 0.0	0.0 0.0	
ACETALD	0.0 0.0	0.0 0.0	0.0 0.0	
ACROL	0.0 0.0	0.0 0.0	0.0 0.0	
H2O	0.0 0.0	0.0 0.0	0.0 0.0	
AC-ACET	0.0 0.0	0.0 0.0	0.0 0.0	
AC-ACRY	0.0 0.0	0.0 0.0	0.0 0.0	
HIDROQUI	0.0 0.0	0.0 0.0	0.0 0.0	
AC-ACRY	HIDROQUI			
N2	0.0 0.0			
ARGON	0.0 0.0			
O2	0.0 0.0			
CO2	0.0 0.0			
PROPYLEN	0.0 0.0			
FORMA-01	0.0 0.0			

ACETALD 0.0 0.0
 ACROL 0.0 0.0
 H2O 0.0 0.0
 AC-ACET 0.0 0.0
 AC-ACRY 0.0 0.0
 HIDROQUI 0.0 0.0
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

TABLE FOR MUKIJ SET = 1 ELEMENT = 3

	N2	ARGON	O2	CO2	PROPYLEN	
N2	0.0	0.0	0.0	0.0	0.0	
ARGON	0.0	0.0	0.0	0.0	0.0	
O2	0.0	0.0	0.0	0.0	0.0	
CO2	0.0	0.0	0.0	0.0	0.0	
PROPYLEN	0.0	0.0	0.0	0.0	0.0	
FORMA-01	0.0	0.0	0.0	0.0	0.0	
ACETALD	0.0	0.0	0.0	0.0	0.0	
ACROL	0.0	0.0	0.0	0.0	0.0	
H2O	0.0	0.0	0.0	0.0	0.0	
AC-ACET	0.0	0.0	0.0	0.0	0.0	
AC-ACRY	0.0	0.0	0.0	0.0	0.0	
HIDROQUI	0.0	0.0	0.0	0.0	0.0	
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0	
ARGON	0.0	0.0	0.0	0.0	0.0	
O2	0.0	0.0	0.0	0.0	0.0	
CO2	0.0	0.0	0.0	0.0	0.0	
PROPYLEN	0.0	0.0	0.0	0.0	0.0	
FORMA-01	0.0	0.0	0.0	0.0	0.0	
ACETALD	0.0	0.0	0.0	0.0	0.0	
ACROL	0.0	0.0	0.0	0.0	0.0	
H2O	0.0	0.0	0.0	0.0	0.0	
AC-ACET	0.0	0.0	0.0	0.0	0.0	
AC-ACRY	0.0	0.0	0.0	0.0	0.0	
HIDROQUI	0.0	0.0	0.0	0.0	0.0	
	AC-ACRY	HIDROQUI				
N2	0.0	0.0				
ARGON	0.0	0.0				
O2	0.0	0.0				
CO2	0.0	0.0				
PROPYLEN	0.0	0.0				
FORMA-01	0.0	0.0				
ACETALD	0.0	0.0				
ACROL	0.0	0.0				
H2O	0.0	0.0				
AC-ACET	0.0	0.0				
AC-ACRY	0.0	0.0				
HIDROQUI	0.0	0.0				

TABLE FOR MUKIJ SET = 1 ELEMENT = 4

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

HIDROQUI	0.0	0.0	0.0	0.0	0.0	
FORMA-01	ACETALD	ACROL	H20	AC-ACET		
N2	0.0	0.0	0.0	0.0	0.0	
ARGON	0.0	0.0	0.0	0.0	0.0	
O2	0.0	0.0	0.0	0.0	0.0	
CO2	0.0	0.0	0.0	0.0	0.0	
PROPYLEN	0.0	0.0	0.0	0.0	0.0	
FORMA-01	0.0	0.0	0.0	0.0	0.0	
ACETALD	0.0	0.0	0.0	0.0	0.0	
ACROL	0.0	0.0	0.0	0.0	0.0	
H20	0.0	0.0	0.0	0.0	0.0	
AC-ACET	0.0	0.0	0.0	0.0	0.0	
AC-ACRY	0.0	0.0	0.0	0.0	0.0	
HIDROQUI	0.0	0.0	0.0	0.0	0.0	
AC-ACRY	HIDROQUI					
N2	0.0	0.0				
ARGON	0.0	0.0				
O2	0.0	0.0				
CO2	0.0	0.0				
PROPYLEN	0.0	0.0				
FORMA-01	0.0	0.0				
ACETALD	0.0	0.0				
ACROL	0.0	0.0				
H20	0.0	0.0				
AC-ACET	0.0	0.0				
AC-ACRY	0.0	0.0				
HIDROQUI	0.0	0.0				

TABLE FOR MUKIJ SET = 1 ELEMENT = 5

N2	ARGON	O2	CO2	PROPYLEN	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H20	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H20	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H20	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

AC-ACRY	HIDROQUI
N2	0.0
ARGON	0.0
O2	0.0
CO2	0.0
PROPYLEN	0.0
FORMA-01	0.0
ACETALD	0.0
ACROL	0.0
H20	0.0
AC-ACET	0.0

AC-ACRY 0.0 0.0
HIDROQUI 0.0 0.0

TABLE FOR MUKIJ SET = 1 ELEMENT = 6

	N2	ARGON	O2	CO2	PROPYLEN
N2	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
ARGON	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
O2	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
CO2	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
PROPYLEN	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
FORMA-01	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
ACETALD	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
ACROL	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
H2O	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
AC-ACET	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
AC-ACRY	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
HIDROQUI	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
ARGON	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
O2	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
CO2	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
PROPYLEN	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
FORMA-01	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
ACETALD	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
ACROL	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
H2O	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
AC-ACET	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
AC-ACRY	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
HIDROQUI	2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02
	AC-ACRY	HIDROQUI			
N2	2.98150+02	2.98150+02			
ARGON	2.98150+02	2.98150+02			
O2	2.98150+02	2.98150+02			
CO2	2.98150+02	2.98150+02			
PROPYLEN	2.98150+02	2.98150+02			
FORMA-01	2.98150+02	2.98150+02			
ACETALD	2.98150+02	2.98150+02			
ACROL	2.98150+02	2.98150+02			
H2O	2.98150+02	2.98150+02			
AC-ACET	2.98150+02	2.98150+02			
AC-ACRY	2.98150+02	2.98150+02			
HIDROQUI	2.98150+02	2.98150+02			

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

TABLE FOR MULIJ SET = 1 ELEMENT = 1

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0

ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI				
N2	0.0	0.0			
ARGON	0.0	0.0			
O2	0.0	0.0			
CO2	0.0	0.0			
PROPYLEN	0.0	0.0			
FORMA-01	0.0	0.0			
ACETALD	0.0	0.0			
ACROL	0.0	0.0			
H2O	0.0	0.0			
AC-ACET	0.0	0.0			
AC-ACRY	0.0	0.0			
HIDROQUI	0.0	0.0			

TABLE FOR MULIJ SET = 1 ELEMENT = 2

N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	
ARGON	0.0	0.0	0.0	0.0	
O2	0.0	0.0	0.0	0.0	
CO2	0.0	0.0	0.0	0.0	
PROPYLEN	0.0	0.0	0.0	0.0	
FORMA-01	0.0	0.0	0.0	0.0	
ACETALD	0.0	0.0	0.0	0.0	
ACROL	0.0	0.0	0.0	0.0	
H2O	0.0	0.0	0.0	0.0	
AC-ACET	0.0	0.0	0.0	0.0	
AC-ACRY	0.0	0.0	0.0	0.0	
HIDROQUI	0.0	0.0	0.0	0.0	
AC-ACRY	HIDROQUI				
N2	0.0	0.0			
ARGON	0.0	0.0			
O2	0.0	0.0			
CO2	0.0	0.0			
PROPYLEN	0.0	0.0			
FORMA-01	0.0	0.0			
ACETALD	0.0	0.0			
ACROL	0.0	0.0			
H2O	0.0	0.0			
AC-ACET	0.0	0.0			
AC-ACRY	0.0	0.0			
HIDROQUI	0.0	0.0			

TABLE FOR MULIJ SET = 1 ELEMENT = 3

N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0

PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

AC-ACRY	HIDROQUI
N2	0.0 0.0
ARGON	0.0 0.0
O2	0.0 0.0
CO2	0.0 0.0
PROPYLEN	0.0 0.0
FORMA-01	0.0 0.0
ACETALD	0.0 0.0
ACROL	0.0 0.0
H2O	0.0 0.0
AC-ACET	0.0 0.0
AC-ACRY	0.0 0.0
HIDROQUI	0.0 0.0

TABLE FOR MULIJ SET = 1 ELEMENT = 4

N2	ARGON	O2	CO2	PROPYLEN
N2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ARGON	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
O2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
CO2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
PROPYLEN	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
FORMA-01	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ACETALD	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ACROL	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
H2O	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
AC-ACET	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
AC-ACRY	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
HIDROQUI	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ARGON	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
O2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
CO2	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
PROPYLEN	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
FORMA-01	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ACETALD	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
ACROL	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
H2O	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
AC-ACET	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
AC-ACRY	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
HIDROQUI	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
AC-ACRY	HIDROQUI			
N2	0.0 0.0			
ARGON	0.0 0.0			
O2	0.0 0.0			

CO2 0.0 0.0
 PROPYLEN 0.0 0.0
 FORMA-01 0.0 0.0
 ACETALD 0.0 0.0
 ACROL 0.0 0.0
 H2O 0.0 0.0
 AC-ACET 0.0 0.0
 AC-ACRY 0.0 0.0
 HIDROQUI 0.0 0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

TABLE FOR MULIJ SET = 1 ELEMENT = 5

N2	ARGON	O2	CO2	PROPYLEN	
N2 0.0	0.0	0.0	0.0	0.0	
ARGON 0.0	0.0	0.0	0.0	0.0	
O2 0.0	0.0	0.0	0.0	0.0	
CO2 0.0	0.0	0.0	0.0	0.0	
PROPYLEN 0.0	0.0	0.0	0.0	0.0	
FORMA-01 0.0	0.0	0.0	0.0	0.0	
ACETALD 0.0	0.0	0.0	0.0	0.0	
ACROL 0.0	0.0	0.0	0.0	0.0	
H2O 0.0	0.0	0.0	0.0	0.0	
AC-ACET 0.0	0.0	0.0	0.0	0.0	
AC-ACRY 0.0	0.0	0.0	0.0	0.0	
HIDROQUI 0.0	0.0	0.0	0.0	0.0	
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2 0.0	0.0	0.0	0.0	0.0	
ARGON 0.0	0.0	0.0	0.0	0.0	
O2 0.0	0.0	0.0	0.0	0.0	
CO2 0.0	0.0	0.0	0.0	0.0	
PROPYLEN 0.0	0.0	0.0	0.0	0.0	
FORMA-01 0.0	0.0	0.0	0.0	0.0	
ACETALD 0.0	0.0	0.0	0.0	0.0	
ACROL 0.0	0.0	0.0	0.0	0.0	
H2O 0.0	0.0	0.0	0.0	0.0	
AC-ACET 0.0	0.0	0.0	0.0	0.0	
AC-ACRY 0.0	0.0	0.0	0.0	0.0	
HIDROQUI 0.0	0.0	0.0	0.0	0.0	
AC-ACRY	HIDROQUI				
N2 0.0	0.0				
ARGON 0.0	0.0				
O2 0.0	0.0				
CO2 0.0	0.0				
PROPYLEN 0.0	0.0				
FORMA-01 0.0	0.0				
ACETALD 0.0	0.0				
ACROL 0.0	0.0				
H2O 0.0	0.0				
AC-ACET 0.0	0.0				
AC-ACRY 0.0	0.0				
HIDROQUI 0.0	0.0				

TABLE FOR MULIJ SET = 1 ELEMENT = 6

N2	ARGON	O2	CO2	PROPYLEN	
N2 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
ARGON 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
O2 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
CO2 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
PROPYLEN 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
FORMA-01 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
ACETALD 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
ACROL 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
H2O 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
AC-ACET 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	
AC-ACRY 2.98150+02	2.98150+02	2.98150+02	2.98150+02	2.98150+02	

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

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HIDROQUI 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
  FORMA-01 ACETALD ACROL H2O AC-ACET
N2 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
ARGON 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
O2 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
CO2 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
PROPYLEN 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
FORMA-01 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
ACETALD 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
ACROL 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
H2O 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
AC-ACET 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
AC-ACRY 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
HIDROQUI 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
  AC-ACRY HIDROQUI
N2 2.98150+02 2.98150+02
ARGON 2.98150+02 2.98150+02
O2 2.98150+02 2.98150+02
CO2 2.98150+02 2.98150+02
PROPYLEN 2.98150+02 2.98150+02
FORMA-01 2.98150+02 2.98150+02
ACETALD 2.98150+02 2.98150+02
ACROL 2.98150+02 2.98150+02
H2O 2.98150+02 2.98150+02
AC-ACET 2.98150+02 2.98150+02
AC-ACRY 2.98150+02 2.98150+02
HIDROQUI 2.98150+02 2.98150+02

```

TABLE FOR UNIQ SET = 1 ELEMENT = 1

	N2	ARGON	O2	CO2	PROPYLEN	
N2	0.0	0.0	0.0	0.0	0.0	
ARGON	0.0	0.0	0.0	0.0	0.0	
O2	0.0	0.0	0.0	0.0	0.0	
CO2	0.0	0.0	0.0	0.0	0.0	
PROPYLEN	0.0	0.0	0.0	0.0	0.0	
FORMA-01	0.0	0.0	0.0	0.0	0.0	
ACETALD	0.0	0.0	0.0	0.0	0.0	
ACROL	0.0	0.0	0.0	0.0	0.0	
H2O	0.0	0.0	0.0	0.0	0.0	
AC-ACET	0.0	0.0	0.0	0.0	0.0	
AC-ACRY	0.0	0.0	0.0	0.0	0.0	
HIDROQUI	0.0	0.0	0.0	0.0	0.0	
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0	
ARGON	0.0	0.0	0.0	0.0	0.0	
O2	0.0	0.0	0.0	0.0	0.0	
CO2	0.0	0.0	0.0	0.0	0.0	
PROPYLEN	0.0	0.0	0.0	0.0	0.0	
FORMA-01	0.0	0.0	0.0	0.0	0.0	
ACETALD	0.0	0.0	0.0	1.19311+01	0.0	
ACROL	0.0	0.0	0.0	0.0	0.0	
H2O	0.0	-4.09210 00	0.0	0.0	0.0	
AC-ACET	0.0	0.0	0.0	0.0	0.0	
AC-ACRY	0.0	0.0	0.0	0.0	0.0	
HIDROQUI	0.0	0.0	0.0	0.0	0.0	

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

```

  AC-ACRY HIDROQUI
N2 0.0 0.0
ARGON 0.0 0.0
O2 0.0 0.0
CO2 0.0 0.0
PROPYLEN 0.0 0.0
FORMA-01 0.0 0.0
ACETALD 0.0 0.0

```

ACROL 0.0 0.0
H2O 0.0 0.0
AC-ACET 0.0 0.0
AC-ACRY 0.0 0.0
HIDROQUI 0.0 0.0

TABLE FOR UNIQ SET = 1 ELEMENT = 2

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	2.29368+01	-4.00672+01	-6.90353+01	-1.32840+01
ARGON	-1.84695+01	0.0	1.21775+02	2.79621+01	-1.41719+02
O2	3.45380+01	-1.44008+02	0.0	-7.55178+01	-2.92861-01
CO2	3.25093 00	-6.79692+01	-1.41831+01	0.0	-7.56950+01
PROPYLEN	4.87540+01	1.18147+02	3.09368+01	6.41436+01	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	6.39471+01	-2.15675+01	4.70710+01	5.00051+01	1.04177+02
ACROL	-5.88482+01	3.38142+02	-1.56464+02	-7.41802+01	-4.24629+01
H2O	2.52116+02	-1.79622+02	2.55000+02	-1.44490+02	-4.04090+02
AC-ACET	6.68561+01	-2.20354+01	4.95399+01	5.25912+01	-1.51671+02
AC-ACRY	6.39696+01	-3.33761+01	4.44632+01	5.27063+01	1.72134+01
HIDROQUI	1.33144+01	-1.33611+02	-2.64608+01	6.65857+01	-2.98416+01
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	1.20581+02	1.24408+02	-3.79808+02	9.44475+01
ARGON	0.0	1.79668+02	-5.91703+02	1.28052+02	1.53296+02
O2	0.0	1.36136+02	1.77814+02	-3.76688+02	1.09447+02
CO2	0.0	7.85602+01	1.05762+02	-6.13623+01	5.08185+01
PROPYLEN	0.0	-3.04736+02	-1.31633+02	-4.23800+02	-1.46466+02
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	-1.72761+01	-4.37681+03	-3.44612+02
ACROL	0.0	1.54505+01	0.0	-5.36810+02	-2.14175+01
H2O	0.0	1.36513+03	4.14812+01	0.0	-7.34440+01
AC-ACET	0.0	1.69502+02	-1.26985+02	2.19660+02	0.0
AC-ACRY	0.0	3.58719+02	1.95212+02	2.49716+02	6.09723+01
HIDROQUI	0.0	1.57953+02	1.70295+02	3.52498+02	-2.66071+02
AC-ACRY	HIDROQUI				
N2	1.23561+02	1.25687+02			
ARGON	1.84076+02	2.03062+02			
O2	1.38894+02	1.47604+02			
CO2	8.64947+01	8.86712+01			
PROPYLEN	-2.03967+02	-2.61042+02			
FORMA-01	0.0	0.0			
ACETALD	-7.01721+02	9.62162+01			
ACROL	-2.98060+02	-1.95242+01			
H2O	-4.42985+02	-1.92311+02			
AC-ACET	-1.09480+02	9.10834+01			
AC-ACRY	0.0	1.97604+02			
HIDROQUI	-3.80872+02	0.0			

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

TABLE FOR UNIQ SET = 1 ELEMENT = 3

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0

PROPYLEN	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI			
N2	0.0	0.0		
ARGON	0.0	0.0		
O2	0.0	0.0		
CO2	0.0	0.0		
PROPYLEN	0.0	0.0		
FORMA-01	0.0	0.0		
ACETALD	0.0	0.0		
ACROL	0.0	0.0		
H2O	0.0	0.0		
AC-ACET	0.0	0.0		
AC-ACRY	0.0	0.0		
HIDROQUI	0.0	0.0		

TABLE FOR UNIQ SET = 1 ELEMENT = 4

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI				
N2	0.0	0.0			
ARGON	0.0	0.0			
O2	0.0	0.0			
CO2	0.0	0.0			
PROPYLEN	0.0	0.0			
FORMA-01	0.0	0.0			
ACETALD	0.0	0.0			
ACROL	0.0	0.0			
H2O	0.0	0.0			
AC-ACET	0.0	0.0			
AC-ACRY	0.0	0.0			
HIDROQUI	0.0	0.0			

TABLE FOR UNIQ SET = 1 ELEMENT = 5

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	2.98150+02	2.98150+02	2.98150+02	2.98150+02

```

ARGON 2.98150+02 0.0 2.98150+02 2.98150+02 2.98150+02
O2 2.98150+02 2.98150+02 0.0 2.98150+02 2.98150+02
CO2 2.98150+02 2.98150+02 2.98150+02 0.0 2.98150+02
PROPYLEN 2.98150+02 2.98150+02 2.98150+02 2.98150+02 0.0
FORMA-01 0.0 0.0 0.0 0.0 0.0
ACETALD 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
ACROL 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
H2O 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
AC-ACET 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
AC-ACRY 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
HIDROQUI 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
FORMA-01 ACETALD ACROL H2O AC-ACET
N2 0.0 2.98150+02 2.98150+02 2.98150+02 2.98150+02
ARGON 0.0 2.98150+02 2.98150+02 2.98150+02 2.98150+02
O2 0.0 2.98150+02 2.98150+02 2.98150+02 2.98150+02
CO2 0.0 2.98150+02 2.98150+02 2.98150+02 2.98150+02
PROPYLEN 0.0 2.98150+02 2.98150+02 2.98150+02 2.98150+02
FORMA-01 0.0 0.0 0.0 0.0 0.0
ACETALD 0.0 0.0 2.98150+02 2.83150+02 2.98150+02
ACROL 0.0 2.98150+02 0.0 2.91500+02 2.98150+02
H2O 0.0 2.83150+02 2.91500+02 0.0 2.93150+02
AC-ACET 0.0 2.98150+02 2.98150+02 2.93150+02 0.0
AC-ACRY 0.0 2.98150+02 2.98150+02 3.73550+02 2.98150+02
HIDROQUI 0.0 2.98150+02 2.98150+02 2.98150+02 2.98150+02
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

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AC-ACRY HIDROQUI
N2 2.98150+02 2.98150+02
ARGON 2.98150+02 2.98150+02
O2 2.98150+02 2.98150+02
CO2 2.98150+02 2.98150+02
PROPYLEN 2.98150+02 2.98150+02
FORMA-01 0.0 0.0
ACETALD 2.98150+02 2.98150+02
ACROL 2.98150+02 2.98150+02
H2O 3.73550+02 2.98150+02
AC-ACET 2.98150+02 2.98150+02
AC-ACRY 0.0 2.98150+02
HIDROQUI 2.98150+02 0.0

```

TABLE FOR UNIQ SET = 1 ELEMENT = 6

```

N2 ARGON O2 CO2 PROPYLEN
N2 1.00000+03 2.98150+02 2.98150+02 2.98150+02 2.98150+02
ARGON 2.98150+02 1.00000+03 2.98150+02 2.98150+02 2.98150+02
O2 2.98150+02 2.98150+02 1.00000+03 2.98150+02 2.98150+02
CO2 2.98150+02 2.98150+02 2.98150+02 1.00000+03 2.98150+02
PROPYLEN 2.98150+02 2.98150+02 2.98150+02 2.98150+02 1.00000+03
FORMA-01 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
ACETALD 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
ACROL 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
H2O 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
AC-ACET 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
AC-ACRY 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
HIDROQUI 2.98150+02 2.98150+02 2.98150+02 2.98150+02 2.98150+02
FORMA-01 ACETALD ACROL H2O AC-ACET
N2 1.00000+03 2.98150+02 2.98150+02 2.98150+02 2.98150+02
ARGON 1.00000+03 2.98150+02 2.98150+02 2.98150+02 2.98150+02
O2 1.00000+03 2.98150+02 2.98150+02 2.98150+02 2.98150+02
CO2 1.00000+03 2.98150+02 2.98150+02 2.98150+02 2.98150+02
PROPYLEN 1.00000+03 2.98150+02 2.98150+02 2.98150+02 2.98150+02
FORMA-01 1.00000+03 1.00000+03 1.00000+03 1.00000+03 1.00000+03
ACETALD 1.00000+03 1.00000+03 2.98150+02 3.48150+02 2.98150+02
ACROL 1.00000+03 2.98150+02 1.00000+03 3.65250+02 2.98150+02
H2O 1.00000+03 3.48150+02 3.65250+02 1.00000+03 3.13150+02
AC-ACET 1.00000+03 2.98150+02 2.98150+02 3.13150+02 1.00000+03
AC-ACRY 1.00000+03 2.98150+02 2.98150+02 3.93650+02 2.98150+02
HIDROQUI 1.00000+03 2.98150+02 2.98150+02 2.98150+02 2.98150+02
AC-ACRY HIDROQUI

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N2 2.98150+02 2.98150+02
 ARGON 2.98150+02 2.98150+02
 O2 2.98150+02 2.98150+02
 CO2 2.98150+02 2.98150+02
 PROPYLEN 2.98150+02 2.98150+02
 FORMA-01 1.00000+03 1.00000+03
 ACETALD 2.98150+02 2.98150+02
 ACROL 2.98150+02 2.98150+02
 H2O 3.93650+02 2.98150+02
 AC-ACET 2.98150+02 2.98150+02
 AC-ACRY 1.00000+03 2.98150+02
 HIDROQUI 2.98150+02 1.00000+03
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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

TABLE FOR UNIQ SET = 1 ELEMENT = 7

	N2	ARGON	O2	CO2	PROPYLEN	
N2	0.0	0.0	0.0	0.0	0.0	
ARGON	0.0	0.0	0.0	0.0	0.0	
O2	0.0	0.0	0.0	0.0	0.0	
CO2	0.0	0.0	0.0	0.0	0.0	
PROPYLEN	0.0	0.0	0.0	0.0	0.0	
FORMA-01	0.0	0.0	0.0	0.0	0.0	
ACETALD	0.0	0.0	0.0	0.0	0.0	
ACROL	0.0	0.0	0.0	0.0	0.0	
H2O	0.0	0.0	0.0	0.0	0.0	
AC-ACET	0.0	0.0	0.0	0.0	0.0	
AC-ACRY	0.0	0.0	0.0	0.0	0.0	
HIDROQUI	0.0	0.0	0.0	0.0	0.0	
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	0.0	0.0	
ARGON	0.0	0.0	0.0	0.0	0.0	
O2	0.0	0.0	0.0	0.0	0.0	
CO2	0.0	0.0	0.0	0.0	0.0	
PROPYLEN	0.0	0.0	0.0	0.0	0.0	
FORMA-01	0.0	0.0	0.0	0.0	0.0	
ACETALD	0.0	0.0	0.0	0.0	0.0	
ACROL	0.0	0.0	0.0	0.0	0.0	
H2O	0.0	0.0	0.0	0.0	0.0	
AC-ACET	0.0	0.0	0.0	0.0	0.0	
AC-ACRY	0.0	0.0	0.0	0.0	0.0	
HIDROQUI	0.0	0.0	0.0	0.0	0.0	
	AC-ACRY	HIDROQUI				
N2	0.0	0.0				
ARGON	0.0	0.0				
O2	0.0	0.0				
CO2	0.0	0.0				
PROPYLEN	0.0	0.0				
FORMA-01	0.0	0.0				
ACETALD	0.0	0.0				
ACROL	0.0	0.0				
H2O	0.0	0.0				
AC-ACET	0.0	0.0				
AC-ACRY	0.0	0.0				
HIDROQUI	0.0	0.0				

TABLE FOR HENRY SET = 1 ELEMENT = 1

	N2	ARGON	O2	CO2	PROPYLEN
N2	MISSING	MISSING	MISSING	MISSING	1.11139+02
ARGON	MISSING	MISSING	MISSING	MISSING	MISSING
O2	MISSING	MISSING	MISSING	MISSING	MISSING
CO2	MISSING	MISSING	MISSING	MISSING	MISSING
PROPYLEN	MISSING	MISSING	MISSING	MISSING	MISSING
FORMA-01	MISSING	MISSING	MISSING	MISSING	MISSING
ACETALD	MISSING	MISSING	MISSING	MISSING	MISSING
ACROL	MISSING	MISSING	MISSING	MISSING	MISSING
H2O	MISSING	MISSING	MISSING	MISSING	MISSING
AC-ACET	MISSING	MISSING	MISSING	MISSING	MISSING

PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

HIDROQUI MISSING MISSING MISSING MISSING MISSING
 FORMA-01 ACETALD ACROL H2O AC-ACET
 N2 MISSING MISSING MISSING MISSING 1.76507+02 1.94859+01
 ARGON MISSING MISSING MISSING MISSING 1.80991+02 MISSING
 O2 MISSING MISSING MISSING MISSING 1.55921+02 1.92295+01
 CO2 MISSING MISSING MISSING MISSING 1.70713+02 -6.46450+01
 PROPYLEN MISSING MISSING MISSING MISSING 3.10686+02 MISSING
 FORMA-01 MISSING MISSING MISSING MISSING MISSING
 ACETALD MISSING MISSING MISSING MISSING MISSING
 ACROL MISSING MISSING MISSING MISSING MISSING
 H2O MISSING MISSING MISSING MISSING MISSING
 AC-ACET MISSING MISSING MISSING MISSING MISSING
 AC-ACRY MISSING MISSING MISSING MISSING MISSING
 HIDROQUI MISSING MISSING MISSING MISSING MISSING
 AC-ACRY HIDROQUI
 N2 MISSING MISSING
 ARGON MISSING MISSING
 O2 MISSING MISSING
 CO2 MISSING MISSING
 PROPYLEN MISSING MISSING
 FORMA-01 MISSING MISSING
 ACETALD MISSING MISSING
 ACROL MISSING MISSING
 H2O MISSING MISSING
 AC-ACET MISSING MISSING
 AC-ACRY MISSING MISSING
 HIDROQUI MISSING MISSING

TABLE FOR HENRY SET = 1 ELEMENT = 2

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	-2.05640+03
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	0.0	0.0	0.0	-8.43277+03	7.40530+01
ARGON	0.0	0.0	0.0	-8.13713+03	0.0
O2	0.0	0.0	0.0	-7.77506+03	0.0
CO2	0.0	0.0	0.0	-8.47771+03	2.16230+03
PROPYLEN	0.0	0.0	0.0	-1.55674+04	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

AC-ACRY HIDROQUI
 N2 0.0 0.0
 ARGON 0.0 0.0
 O2 0.0 0.0
 CO2 0.0 0.0

PROPYLEN 0.0 0.0
 FORMA-01 0.0 0.0
 ACETALD 0.0 0.0
 ACROL 0.0 0.0
 H2O 0.0 0.0
 AC-ACET 0.0 0.0
 AC-ACRY 0.0 0.0
 HIDROQUI 0.0 0.0

TABLE FOR HENRY SET = 1 ELEMENT = 3

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	-1.60110+01
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	0.0	0.0	0.0	-2.15580+01	0.0
ARGON	0.0	0.0	0.0	-2.32547+01	0.0
O2	0.0	0.0	0.0	-1.83974+01	0.0
CO2	0.0	0.0	0.0	-2.19574+01	1.28890+01
PROPYLEN	0.0	0.0	0.0	-4.17376+01	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

	AC-ACRY	HIDROQUI
N2	0.0	0.0
ARGON	0.0	0.0
O2	0.0	0.0
CO2	0.0	0.0
PROPYLEN	0.0	0.0
FORMA-01	0.0	0.0
ACETALD	0.0	0.0
ACROL	0.0	0.0
H2O	0.0	0.0
AC-ACET	0.0	0.0
AC-ACRY	0.0	0.0
HIDROQUI	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

TABLE FOR HENRY SET = 1 ELEMENT = 4

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	0.0	0.0	0.0	-8.43624-03	0.0

ARGON	0.0	0.0	0.0	3.06357-03	0.0
O2	0.0	0.0	0.0	-9.44354-03	0.0
CO2	0.0	0.0	0.0	5.78075-03	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI				
N2	0.0	0.0			
ARGON	0.0	0.0			
O2	0.0	0.0			
CO2	0.0	0.0			
PROPYLEN	0.0	0.0			
FORMA-01	0.0	0.0			
ACETALD	0.0	0.0			
ACROL	0.0	0.0			
H2O	0.0	0.0			
AC-ACET	0.0	0.0			
AC-ACRY	0.0	0.0			
HIDROQUI	0.0	0.0			

TABLE FOR HENRY SET = 1 ELEMENT = 5

N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0
PROPYLEN	7.90500+01	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0
H2O	2.73000+02	2.74000+02	2.74000+02	2.73000+02
AC-ACET	2.93150+02	0.0	2.93150+02	2.91150+02
AC-ACRY	0.0	0.0	0.0	0.0

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PARAMETER VALUES (CONTINUED)

HIDROQUI	0.0	0.0	0.0	0.0	0.0
FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
N2	0.0	0.0	0.0	2.73000+02	2.93150+02
ARGON	0.0	0.0	0.0	2.74000+02	0.0
O2	0.0	0.0	0.0	2.74000+02	2.93150+02
CO2	0.0	0.0	0.0	2.73000+02	2.91150+02
PROPYLEN	0.0	0.0	0.0	2.94000+02	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI				
N2	0.0	0.0			
ARGON	0.0	0.0			
O2	0.0	0.0			
CO2	0.0	0.0			
PROPYLEN	0.0	0.0			
FORMA-01	0.0	0.0			
ACETALD	0.0	0.0			
ACROL	0.0	0.0			
H2O	0.0	0.0			
AC-ACET	0.0	0.0			
AC-ACRY	0.0	0.0			
HIDROQUI	0.0	0.0			

TABLE FOR HENRY SET = 1 ELEMENT = 6

	N2	ARGON	O2	CO2	PROPYLEN
N2	2.00000+03	2.00000+03	2.00000+03	2.00000+03	9.05000+01
ARGON	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
O2	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
CO2	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
PROPYLEN	9.05000+01	2.00000+03	2.00000+03	2.00000+03	2.00000+03
FORMA-01	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
ACETALD	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
ACROL	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
H2O	3.46000+02	3.47000+02	3.48000+02	5.00000+02	3.78000+02
AC-ACET	2.98150+02	2.00000+03	2.93150+02	3.09150+02	2.00000+03
AC-ACRY	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
HIDROQUI	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	2.00000+03	2.00000+03	2.00000+03	3.46000+02	2.98150+02
ARGON	2.00000+03	2.00000+03	2.00000+03	3.47000+02	2.00000+03
O2	2.00000+03	2.00000+03	2.00000+03	3.48000+02	2.93150+02
CO2	2.00000+03	2.00000+03	2.00000+03	5.00000+02	3.09150+02
PROPYLEN	2.00000+03	2.00000+03	2.00000+03	3.78000+02	2.00000+03
FORMA-01	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
ACETALD	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
ACROL	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
H2O	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
AC-ACET	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
AC-ACRY	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03
HIDROQUI	2.00000+03	2.00000+03	2.00000+03	2.00000+03	2.00000+03

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PARAMETER VALUES (CONTINUED)

	AC-ACRY	HIDROQUI
N2	2.00000+03	2.00000+03
ARGON	2.00000+03	2.00000+03
O2	2.00000+03	2.00000+03
CO2	2.00000+03	2.00000+03
PROPYLEN	2.00000+03	2.00000+03
FORMA-01	2.00000+03	2.00000+03
ACETALD	2.00000+03	2.00000+03
ACROL	2.00000+03	2.00000+03
H2O	2.00000+03	2.00000+03
AC-ACET	2.00000+03	2.00000+03
AC-ACRY	2.00000+03	2.00000+03
HIDROQUI	2.00000+03	2.00000+03

TABLE FOR HENRY SET = 1 ELEMENT = 7

	N2	ARGON	O2	CO2	PROPYLEN
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0
	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
N2	0.0	0.0	0.0	0.0	0.0
ARGON	0.0	0.0	0.0	0.0	0.0
O2	0.0	0.0	0.0	0.0	0.0
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	0.0	0.0
FORMA-01	0.0	0.0	0.0	0.0	0.0
ACETALD	0.0	0.0	0.0	0.0	0.0
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	0.0	0.0	0.0	0.0	0.0
AC-ACET	0.0	0.0	0.0	0.0	0.0

AC-ACRY	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0
AC-ACRY	HIDROQUI			
N2	0.0	0.0		
ARGON	0.0	0.0		
O2	0.0	0.0		
CO2	0.0	0.0		
PROPYLEN	0.0	0.0		
FORMA-01	0.0	0.0		
ACETALD	0.0	0.0		
ACROL	0.0	0.0		
H2O	0.0	0.0		
AC-ACET	0.0	0.0		
AC-ACRY	0.0	0.0		
HIDROQUI	0.0	0.0		

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PARAMETER VALUES (CONTINUED)

UNIFAC GROUPS - UNARY PARAMETER TABLE

PARAMETER		COMPONENTS				
NAME/SET/EL		3820	3870	3830	3850	1015
GMUFR	1	8.56000-01	1.17700 00	7.33000-01	1.30000 00	9.01100-01
GMUFR	2	8.56000-01	1.17700 00	7.33000-01	1.30000 00	9.01100-01
GMUFQ	1	9.30000-01	1.11600 00	8.49000-01	9.82000-01	8.48000-01
GMUFQ	2	9.30000-01	1.11600 00	8.49000-01	9.82000-01	8.48000-01
GMUFLR	1	9.34000-01	1.17700 00	8.82000-01	1.29600 00	9.01100-01
GMUFLQ	1	9.85000-01	1.11600 00	9.55000-01	1.26100 00	8.48000-01
GMUFDR	1	8.56000-01	1.17700 00	7.33000-01	1.30000 00	6.32500-01
GMUFDQ	1	9.30000-01	1.11600 00	8.49000-01	9.82000-01	1.06080 00

PARAMETER		COMPONENTS				
NAME/SET/EL		1070	1450	1300	1955	1105
GMUFR	1	1.34540 00	9.98000-01	9.20000-01	1.30130 00	5.31300-01
GMUFR	2	1.34540 00	9.98000-01	9.20000-01	1.30130 00	5.31300-01
GMUFQ	1	1.17600 00	9.48000-01	1.40000 00	1.22400 00	4.00000-01
GMUFQ	2	1.17600 00	9.48000-01	1.40000 00	1.22400 00	4.00000-01
GMUFLR	1	1.34540 00	9.98000-01	9.20000-01	1.30130 00	5.31300-01
GMUFLQ	1	1.17600 00	9.48000-01	1.40000 00	1.22400 00	4.00000-01
GMUFDR	1	1.28320 00	7.17300-01	1.73340 00	8.00000-01	3.76300-01
GMUFDQ	1	1.60160 00	7.71000-01	2.45610 00	9.21500-01	4.32100-01

PARAMETER		COMPONENTS		
NAME/SET/EL		1350	1100	1200
GMUFR	1	8.95200-01	3.65200-01	1.00000 00
GMUFR	2	8.95200-01	3.65200-01	1.00000 00
GMUFQ	1	6.80000-01	1.20000-01	1.20000 00
GMUFQ	2	6.80000-01	1.20000-01	1.20000 00
GMUFLR	1	MISSING	3.65200-01	1.00000 00
GMUFLQ	1	MISSING	1.20000-01	1.20000 00
GMUFDR	1	1.08000 00	3.76300-01	1.23020 00
GMUFDQ	1	9.75000-01	2.11300-01	8.92700-01

UNIFAC GROUPS - BINARY PARAMETER TABLES

TABLE FOR GMUFB SET = 1 ELEMENT = 1					
	3820	3870	3830	3850	1015
3820	0.0	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0	0.0
1015	0.0	0.0	0.0	0.0	0.0
1070	0.0	0.0	0.0	0.0	-3.53600+01
1450	0.0	0.0	0.0	0.0	5.05700+02
1300	0.0	0.0	0.0	0.0	3.00000+02
1955	0.0	0.0	0.0	0.0	3.15300+02
1105	0.0	0.0	0.0	0.0	-1.11200+01
1350	0.0	0.0	0.0	0.0	2.75800+02

1100	0.0	0.0	0.0	-1.11200+01
1200	0.0	0.0	0.0	1.56400+02
1070	1450	1300	1955	1105
3820	0.0	0.0	0.0	0.0

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PARAMETER VALUES (CONTINUED)

3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	8.60200+01	6.77000+02	1.31800+03	6.63500+02 6.11300+01
1070	0.0	4.48800+02	2.70600+02	3.18900+02 3.88100+01
1450	5.63000+01	0.0	4.80800+02	4.97500+02 2.33900+01
1300	4.96100+02	-1.16000+02	0.0	-1.40900+01 3.62300+02
1955	1.26400+03	-1.65500+02	-6.61700+01	0.0 6.23200+01
1105	3.44600 00	3.47300+02	9.03800+02	5.37400+02 0.0
1350	2.17500+02	-2.71100+02	-6.01800+02	4.08900+02 2.53400+01
1100	3.44600 00	3.47300+02	9.03800+02	5.37400+02 0.0
1200	4.57000+02	-2.03600+02	3.53500+02	1.99000+02 8.96000+01
1350	1100	1200		
3820	0.0	0.0		
3870	0.0	0.0		
3830	0.0	0.0		
3850	0.0	0.0		
1015	1.33300+03	6.11300+01	9.86500+02	
1070	5.26100+02	3.88100+01	5.24100+02	
1450	-1.55600+02	2.33900+01	5.29000+02	
1300	3.24500+02	3.62300+02	-2.29100+02	
1955	-1.10000+01	6.23200+01	-1.51000+02	
1105	1.32900+03	0.0	6.36100+02	
1350	0.0	2.53400+01	-4.51600+02	
1100	1.32900+03	0.0	6.36100+02	
1200	-2.59700+02	8.96000+01	0.0	

TABLE FOR GMUFB SET = 2 ELEMENT = 1

3820	3870	3830	3850	1015
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	0.0	0.0	0.0	0.0
1070	0.0	0.0	0.0	2.92300+02
1450	0.0	0.0	0.0	1.46100+02
1300	0.0	0.0	0.0	3.42400+02
1955	0.0	0.0	0.0	1.74400+03
1105	0.0	0.0	0.0	1.56500+02
1350	0.0	0.0	0.0	-1.59800+02
1100	0.0	0.0	0.0	1.56500+02
1200	0.0	0.0	0.0	3.28200+02
1070	1450	1300	1955	1105
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	7.45400+01	1.58100+02	1.30000+03	1.39400+02 -1.14800+02
1070	0.0	-2.14700+02	8.96000+02	1.64700+03 3.88100+01
1450	5.17000+02	0.0	6.23700+02	7.50000-01 -7.53000+01
1300	2.20600+02	-3.49900+02	0.0	-4.65700+02 3.72800+02
1955	-4.85200+01	1.05100+03	6.52300+02	0.0 7.54900+01
1105	3.44600 00	3.62300+02	8.59400+02	4.61800+02 0.0
1350	0.0	0.0	-5.95900+02	0.0 -4.73200+02
1100	3.44600 00	3.62300+02	8.59400+02	4.61800+02 0.0

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PARAMETER VALUES (CONTINUED)

1200	4.70700+02	1.40900+03	2.87300+01	-1.04000+02 -9.21000 00
1350	1100	1200		

3820	0.0	0.0
3870	0.0	0.0
3830	0.0	0.0
3850	0.0	0.0
1015	2.25500+03	-1.14800+02 6.44600+02
1070	0.0	3.88100+01 7.24400+02
1450	0.0	-7.53000+01 -4.31300+02
1300	3.44500+02	3.72800+02 -1.22400+02
1955	0.0	7.54900+01 1.18400+02
1105	1.64900+03	0.0 7.03900+02
1350	0.0	-4.73200+02 -6.31500+01
1100	1.64900+03	0.0 7.03900+02
1200	-1.95500+02	-9.21000 00 0.0

TABLE FOR UNIFLB SET = 1 ELEMENT = 1

3820	3870	3830	3850	1015
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	0.0	0.0	0.0	0.0
1070	0.0	0.0	0.0	-4.64500+01
1450	0.0	0.0	0.0	3.13500+02
1300	0.0	0.0	0.0	4.10700+02
1955	0.0	0.0	0.0	1.71500+02
1105	0.0	0.0	0.0	-1.44700 00
1350	0.0	0.0	0.0	0.0
1100	0.0	0.0	0.0	-1.44700 00
1200	0.0	0.0	0.0	6.37500+02
1070	1450	1300	1955	1105
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	7.64600+01	7.21500+02	1.85700+03	6.64100+02 6.28800+01
1070	0.0	3.20400+02	1.04900+03	1.86000+02 3.50700+01
1450	1.61800+02	0.0	0.0	1.25400+02
1300	5.64400+02	0.0	0.0	8.62100 00 7.36700+02
1955	2.27300+02	0.0	8.64400+01	0.0 6.23200+01
1105	-2.77200-02	2.15100+02	1.05500+03	5.37400+02 0.0
1350	0.0	0.0	0.0	0.0
1100	-2.77200-02	2.15100+02	1.05500+03	5.37400+02 0.0
1200	7.94700+02	-3.25200+02	1.55600+02	6.17800+01 5.87300+02
1350	1100	1200		
3820	0.0	0.0		
3870	0.0	0.0		
3830	0.0	0.0		
3850	0.0	0.0		
1015	0.0	6.28800+01	9.72800+02	
1070	0.0	3.50700+01	6.33500+02	
1450	0.0	1.25400+02	2.55300+03	
1300	0.0	7.36700+02	-4.71500+01	
1955	0.0	6.23200+01	-9.22100+01	

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

1105	0.0	7.12600+02
1350	0.0	0.0
1100	0.0	7.12600+02
1200	0.0	5.87300+02 0.0

TABLE FOR UNIFLB SET = 1 ELEMENT = 2

3820	3870	3830	3850	1015
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	0.0	0.0	0.0	0.0
1070	0.0	0.0	0.0	-1.81700-01

1450	0.0	0.0	0.0	-4.06400	00
1300	0.0	0.0	0.0	2.86800	00
1955	0.0	0.0	0.0	-1.46300	00
1105	0.0	0.0	0.0	5.63800	-02
1350	0.0	0.0	0.0	0.0	
1100	0.0	0.0	0.0	5.63800	-02
1200	0.0	0.0	0.0	-5.83200	00
1070	1450	1300	1955	1105	
3820	0.0	0.0	0.0	0.0	
3870	0.0	0.0	0.0	0.0	
3830	0.0	0.0	0.0	0.0	
3850	0.0	0.0	0.0	0.0	
1015	-1.83400	-01	-1.47000	00	-3.32200 00 1.31700 00 -2.49300 -01
1070	0.0	0.0	-3.30500	00	0.0 -8.04200 -02
1450	0.0	0.0	0.0	-3.13300	00
1300	0.0	0.0	-1.70900	00	1.96500 00
1955	0.0	0.0	9.94100	-01	0.0 0.0
1105	-7.12900	-02	1.93600	00	-2.96800 00 0.0 0.0
1350	0.0	0.0	0.0	0.0	0.0
1100	-7.12900	-02	1.93600	00	-2.96800 00 0.0 0.0
1200	0.0	0.0	3.76100	-01	0.0 -6.78700 -01
1350	1100	1200			
3820	0.0	0.0			
3870	0.0	0.0			
3830	0.0	0.0			
3850	0.0	0.0			
1015	0.0	-2.49300	-01	2.68700	-01
1070	0.0	-8.04200	-02	0.0	
1450	0.0	-3.13300	00	0.0	
1300	0.0	1.96500	00	-4.94700	-01
1955	0.0	0.0	0.0		
1105	0.0	0.0	-1.45900	00	
1350	0.0	0.0			
1100	0.0	0.0	-1.45900	00	
1200	0.0	-6.78700	-01	0.0	

TABLE FOR UNIFLB SET = 1 ELEMENT = 3

3820	3870	3830	3850	1015
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

1015	0.0	0.0	0.0	0.0	
1070	0.0	0.0	0.0	-4.88800	-01
1450	0.0	0.0	0.0	0.0	
1300	0.0	0.0	0.0	9.00000	00
1955	0.0	0.0	0.0	6.75900	-01
1105	0.0	0.0	0.0	-1.61200	00
1350	0.0	0.0	0.0	0.0	
1100	0.0	0.0	0.0	-1.61200	00
1200	0.0	0.0	0.0	-8.70300	-01
1070	1450	1300	1955	1105	
3820	0.0	0.0	0.0	0.0	
3870	0.0	0.0	0.0	0.0	
3830	0.0	0.0	0.0	0.0	
3850	0.0	0.0	0.0	0.0	
1015	-3.65900	-01	0.0	-9.00000	00 -4.90400 00 1.10300 00
1070	0.0	0.0	0.0	0.0	-3.76100 -01
1450	0.0	0.0	0.0	0.0	
1300	0.0	0.0	6.41300	00	0.0
1955	0.0	0.0	-1.27400	+01	0.0 0.0
1105	-3.40700	-01	0.0	9.85400	00 0.0 0.0
1350	0.0	0.0	0.0	0.0	
1100	-3.40700	-01	0.0	9.85400	00 0.0 0.0
1200	0.0	0.0	-9.00000	00	0.0 9.00000 00
1350	1100	1200			

3820	0.0	0.0
3870	0.0	0.0
3830	0.0	0.0
3850	0.0	0.0
1015	1.10300 00	8.77300 00
1070	-3.76100-01	0.0
1450	0.0	0.0
1300	0.0	8.65000 00
1955	0.0	0.0
1105	0.0	9.00000 00
1350	0.0	0.0
1100	0.0	9.00000 00
1200	9.00000 00	0.0

TABLE FOR UNIFDM SET = 1 ELEMENT = 1

3820	3870	3830	3850	1015
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	0.0	0.0	0.0	0.0
1070	0.0	0.0	0.0	-9.54180+01
1450	0.0	0.0	0.0	2.56210+02
1300	0.0	0.0	0.0	-1.72530+01
1955	0.0	0.0	0.0	2.01770+03
1105	0.0	0.0	0.0	1.60700+01
1350	0.0	0.0	0.0	1.98700+03
1100	0.0	0.0	0.0	1.60700+01
1200	0.0	0.0	0.0	1.60600+03

1070	1450	1300	1955	1105
3820	0.0	0.0	0.0	0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	1.89660+02	8.75850+02	1.39130+03	1.18220+03 1.14200+02
1070	0.0	4.76250+02	7.78300+02	-2.02610+03 1.74100+02
1450	2.02490+02	0.0	5.12600+02	4.35640+02 1.01100+03
1300	-1.30100+03	-1.54500+03	0.0	-1.79520+03 3.32300+02
1955	-3.47500+02	-1.88000+02	6.24970+02	0.0 6.13320+02
1105	-1.57200+02	-3.65500+02	7.92000+02	6.95610+01 0.0
1350	1.91600+02	5.60400 00	1.48400+02	4.01880+02 2.34000+03
1100	-1.57200+02	-3.65500+02	7.92000+02	6.95610+01 0.0
1200	1.56600+03	-2.81400+02	-8.01900+02	-1.29500+03 3.04900+03

1350	1100	1200
3820	0.0	0.0
3870	0.0	0.0
3830	0.0	0.0
3850	0.0	0.0
1015	1.38100+03	1.14200+02 2.77700+03
1070	1.20700+03	1.74100+02 2.64900+03
1450	-4.10210+02	1.01100+03 1.59000+03
1300	-2.68600+03	3.32300+02 1.46000+03
1955	2.81080+02	6.13320+02 1.52580+03
1105	1.35600+03	0.0 3.97200+03
1350	0.0	2.34000+03 4.65400+02
1100	1.35600+03	0.0 3.97200+03
1200	8.39100+01	3.04900+03 0.0

TABLE FOR UNIFDM SET = 1 ELEMENT = 2

3820	3870	3830	3850	1015
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	0.0	0.0	0.0	0.0
1070	0.0	0.0	0.0	6.17080-02

1450	0.0	0.0	0.0	0.0
1300	0.0	0.0	0.0	8.38900-01
1955	0.0	0.0	0.0	-9.09330 00
1105	0.0	0.0	0.0	-2.99800-01
1350	0.0	0.0	0.0	-4.61500 00
1100	0.0	0.0	0.0	-2.99800-01
1200	0.0	0.0	0.0	-4.74600 00
1070	1450	1300	1955	1105
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	-2.72320-01	0.0	-3.61560 00	-3.26470 00 9.33000-02
1070	0.0	0.0	1.48200-01	8.15490 00 -5.88600-01
1450	0.0	0.0	-2.14500 00	0.0 -2.16700 00
1300	4.07200 00	6.51200 00	0.0	1.27080+01 1.15800 00
1955	1.21600 00	0.0	-4.68780 00	0.0 -1.59500 00
1105	6.16600-01	1.87400 00	-1.72600 00	1.88810 00 0.0
1350	4.93600-01	0.0	-2.75700 00	0.0 -5.04300 00
1100	6.16600-01	1.87400 00	-1.72600 00	1.88810 00 0.0

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

1200	-5.80900 00	2.37900 00	3.82400 00	4.36340 00 -1.27700+01
1350	1100	1200		
3820	0.0	0.0		
3870	0.0	0.0		
3830	0.0	0.0		
3850	0.0	0.0		
1015	-9.97700-01	9.33000-02	-4.67400 00	
1070	-1.95500 00	-5.88600-01	-6.50800 00	
1450	0.0	-2.16700 00	-2.45700+01	
1300	1.94400+01	1.15800 00	-8.67300 00	
1955	0.0	-1.59500 00	-4.91550 00	
1105	-2.11800 00	0.0	-1.31600+01	
1350	0.0	-5.04300 00	-1.84100 00	
1100	-2.11800 00	0.0	-1.31600+01	
1200	-1.26200 00	-1.27700+01	0.0	

TABLE FOR UNIFDM SET = 1 ELEMENT = 3

3820	3870	3830	3850	1015
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	0.0	0.0	0.0	0.0
1070	0.0	0.0	0.0	0.0
1450	0.0	0.0	0.0	0.0
1300	0.0	0.0	0.0	9.02100-04
1955	0.0	0.0	0.0	1.02380-02
1105	0.0	0.0	0.0	0.0
1350	0.0	0.0	0.0	0.0
1100	0.0	0.0	0.0	0.0
1200	0.0	0.0	0.0	9.18100-04
1070	1450	1300	1955	1105
3820	0.0	0.0	0.0	0.0
3870	0.0	0.0	0.0	0.0
3830	0.0	0.0	0.0	0.0
3850	0.0	0.0	0.0	0.0
1015	0.0	0.0	1.14400-03	9.19800-03 0.0
1070	0.0	0.0	0.0	0.0
1450	0.0	0.0	0.0	0.0
1300	0.0	0.0	-1.54550-02	0.0
1955	0.0	0.0	5.23710-03	0.0 0.0
1105	0.0	0.0	0.0	0.0
1350	0.0	0.0	2.32900-03	0.0 0.0
1100	0.0	0.0	0.0	0.0
1200	5.19700-03	-6.66800-03	-7.51400-03	0.0 1.43500-02
1350	1100	1200		

3820	0.0	0.0	
3870	0.0	0.0	
3830	0.0	0.0	
3850	0.0	0.0	
1015	0.0	1.55100-03	
1070	0.0	4.82200-03	
1450	0.0	6.21200-02	
1300-2.70200-02	0.0	1.64100-02	
1955	0.0	0.0	

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PHYSICAL PROPERTIES SECTION

PARAMETER VALUES (CONTINUED)

1105	0.0	0.0	1.20800-02
1350	0.0	0.0	
1100	0.0	0.0	1.20800-02
1200	0.0	1.43500-02	0.0

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS

PARAMETERS ACTUALLY USED IN THE SIMULATION

PURE COMPONENT PARAMETERS

COMPONENT ID: N2
 FORMULA: N2 NAME: N2

SCALAR PARAMETERS

PARAM SET DESCRIPTIONS NAME NO.	VALUE	UNITS	SOURCE
API 1 STANDARD API GRAVITY	340.00		PURE37
CHARGE 1 IONIC CHARGE	0.0000		AQUEOUS
CHI 1 STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1 COMPONENT CLASS INDEX	100.00		DEFAULT
DCPLS 1 DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	2.1353	CAL/MOL-K	PURE37
DGFORM 1 IDEAL GAS GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	PURE37
DGSFRM 1 SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM 1 AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHFORM 1 IDEAL GAS ENTHALPY OF FORMATION	0.0000	KCAL/MOL	PURE37
DHSFRM 1 SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB 1 ENTHALPY OF VAPORIZATION AT TB	1.3300	KCAL/MOL	PURE37
DLWC 1 WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT
DVBLNC 1 CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000		DEFAULT
FREEZEPT1	-210.00	C	PURE37

PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQQ1	1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	1.0880		DEFAULT
GMUQR	1	UNIQUAC MOLECULAR VOLUME PARAMETER	1.0415		PURE37
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	0.0000	KCAL/MOL	DEFAULT
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	0.17197	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	0.0000	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	28.013		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.37721E-01		PURE37
PC	1	CRITICAL PRESSURE	3400.0	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.28997		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	45.765	CAL/MOL-K	AQUEOUS
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	0.30000		PURE37
TB	1	NORMAL BOILING POINT	-195.81	C	PURE37
TC	1	CRITICAL TEMPERATURE	-146.95	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	-210.00	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	34.672	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	89.210	CC/MOL	PURE37
VCRKT	1	VC FOR RACKETT MODEL	89.210	CC/MOL	DEFAULT

PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	53.558	CC/MOL	PURE37
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.28900		PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 6.95161
B = 2.05763
C = 1701.60
D = 0.247134E-01
E = 909.790
T RANGE = 50.00 TO 1500.00 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 57.0745
B = 0.329318
C = 0.528447E-03
D = 0.00000
E = 0.00000
T RANGE = -236.15 TO -210.15 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - \text{Tr})^B + C\text{Tr} + D\text{Tr}^2 + E\text{Tr}^3 \text{ where } \text{Tr} = T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 1.78908
B = 0.404060
C = -0.317000
D = 0.273430
E = 0.00000
T RANGE = -210.00 TO -146.95 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^{(1 + (1 - T/C)^D)})$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 3.20910
B = 0.286100
C = 126.200
D = 0.296600
E = 0.00000
T RANGE = 63.15 TO 126.20 K

DNSTDIP DIPPR solid density

$$\text{DNSTDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 21.4067
B = -0.602720E-01
C = 0.00000
D = 0.00000
E = 0.00000

T RANGE = -252.50 TO -210.00 C

KLDIP DIPPR liquid thermal conductivity

$KLDIP = A + BT + CT^2 + DT^3 + ET^4$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = -0.165669
B = -0.144196E-02
C = 0.00000
D = 0.00000
E = 0.00000

T RANGE = -210.00 TO -149.15 C

KVDIP DIPPR vapor thermal conductivity

$KVDIP = AT^B/(1 + C/T + D/T^2)$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.284979E-03
B = 0.772200
C = 16.3230
D = 373.720
E = 0.00000

T RANGE = 63.15 TO 2000.00 K

MULDIP DIPPR liquid viscosity

$LN(MULDIP) = A + B/T + C LN(T) + DT^E$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = 22.9118
B = -181.610
C = -5.15510
D = 0.00000
E = 0.00000

T RANGE = 63.15 TO 124.00 K

MUVDIP DIPPR vapor viscosity

$MUVDIP = AT^B/(1 + C/T + D/T^2)$

TEMP UNITS: K PROP UNITS: CP

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.655920E-03
B = 0.608100
C = 54.7140
D = 0.00000
E = 0.00000

T RANGE = 63.15 TO 1970.00 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$\text{LN(PL)} = A + B/(T + C) + DT + E \text{ LN}(T) + FT^G$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 51.3742
B = -1084.10
C = 0.00000
D = 0.00000
E = -8.31440
F = 0.441270E-01
G = 1.00000

T RANGE = 63.15 TO 126.20 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$\text{LN(PS)} = A + B/(T + C) + D \text{ LN}(T) + ET^F + G/T^2$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 12498.1
B = 0.00000
C = 0.00000
D = 0.00000
E = 0.00000
F = 2.00000
G = 0.00000

T RANGE = 63.15 TO 63.15 K

SIGDIP DIPPR liquid surface tension

$\text{SIGDIP} = A(1 - T_r)^{(B + CT_r + DT_r^2 + ET_r^3)}$ where $T_r = T/T_c$

TEMP UNITS: C PROP UNITS: DYNE/CM

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 28.6990
B = 1.23850
C = 0.00000
D = 0.00000
E = 0.00000

T RANGE = -210.00 TO -146.95 C

VLBROC BRELVIO-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: AQUEOUS

A = 89.6408
B = 0.00000

WATSOL WATER SOLUBILITY

$$\ln(XWSOL) = A + B/T + CT$$

SET: 1 SOURCE: PURE37

A = -5.30000
B = -500.000
C = 0.00000
T RANGE = 200.00 TO 373.00

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 7.00000

NOATOM NUMBER OF OCCURENCES FOR EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 2.00000

UFGRP UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3820.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

3820.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3820.00 1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3820.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: ARGON
FORMULA: AR NAME: AR

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	340.00		PURE37
CHARGE	1	IONIC CHARGE	0.0000		AQUEOUS
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	100.00		DEFAULT
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	-2.8900	KCAL/MOL	AQUEOUS
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	0.0000	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	1.5351	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000		DEFAULT
FREEZEPT1			-189.37	C	PURE37
GMUQQ	1	UNIQUAC MOLECULAR AREA PARAMETER	1.0680		PURE37
GMUQQ1	1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	1.0680		DEFAULT
GMUQR	1	UNIQUAC MOLECULAR VOLUME PARAMETER	1.1075		PURE37

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	0.0000	KCAL/MOL	PURE37
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	0.28232	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	0.0000	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	39.948		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.0000		PURE37
PC	1	CRITICAL PRESSURE	4898.0	KPA	PURE37

RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.29317		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	36.984	CAL/MOL-K	AQUEOUS
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	0.30000		PURE37
TB	1	NORMAL BOILING POINT	-185.87	C	PURE37
TC	1	CRITICAL TEMPERATURE	-122.29	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	-189.37	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	28.616	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	74.590	CC/MOL	PURE37
VCRKT	1	VC FOR RACKETT MODEL	74.590	CC/MOL	DEFAULT
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	53.558	CC/MOL	PURE37
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.29100		PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 4.96465
 B = 0.00000
 C = 0.00000
 D = 0.00000
 E = 0.00000
 T RANGE = -173.15 TO 1226.85 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - T_r)^{(B + CT_r + DT_r^2 + ET_r^3)} \text{ where } T_r = T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

SET: 1 SOURCE: PURE37

A = 2.01144
 B = 0.283330
 C = 0.332810E-01
 D = 0.305510E-01
 E = 0.00000
 T RANGE = -189.37 TO -122.29 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^{(1 + (1 - T/C)^D)})$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 3.84690

B = 0.288100

C = 150.860

D = 0.297830

E = 0.00000

T RANGE = 83.78 TO 150.86 K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 44.3330

B = 0.00000

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -273.15 TO -273.15 C

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = -0.181860

B = -0.220369E-02

C = -0.353396E-05

D = 0.00000

E = 0.00000

T RANGE = -189.37 TO -123.15 C

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.544282E-03

B = 0.622100

C = 70.0000

D = 0.00000

E = 0.00000

T RANGE = 90.00 TO 3273.10 K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

MULDIP DIPPR liquid viscosity

$$\ln(\text{MULDIP}) = A + B/T + C \ln(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = -1.96074
 B = 204.290
 C = -0.383050
 D = -0.129370E-21
 E = 10.0000
 T RANGE = 83.78 TO 150.00 K

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = 0.921210E-03
 B = 0.605290
 C = 83.2400
 D = 0.00000
 E = 0.00000
 T RANGE = 83.78 TO 3273.10 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\ln(PL) = A + B/(T + C) + DT + E \ln(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 35.2192
 B = -1093.10
 C = 0.00000
 D = 0.00000
 E = -4.14250
 F = 0.572540E-04
 G = 2.00000
 T RANGE = 83.78 TO 150.86 K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\ln(PS) = A + B/(T + C) + D \ln(T) + ET^F + G/T^2$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 11.4332
 B = -896.090
 C = 0.00000
 D = 0.839270
 E = -0.317660E-04
 F = 2.00000
 G = 0.00000
 T RANGE = 61.86 TO 83.78 K

SIGDIP DIPPR liquid surface tension

$$\text{SIGDIP} = A(1 - T_r)^{(B + CT_r + DT_r^2 + ET_r^3)} \text{ where } T_r = T/T_c$$

TEMP UNITS: C PROP UNITS: DYNE/CM

SET: 1 SOURCE: PURE37

A = 38.2300

B = 1.29270

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -189.37 TO -122.29 C

VLBROC BRELVI-O-CONNELL

VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: AQUEOUS

A = 74.8588

B = 0.00000

WATSOL WATER SOLUBILITY

$\text{LN}(\text{XWSOL}) = A + B/T + CT$

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = -5.30000

B = -500.000

C = 0.00000

T RANGE = 200.00 TO 373.00

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 18.0000

NOATOM NUMBER OF OCCURENCES FOR
EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 1.00000

UFGRP UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3870.00 1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

3870.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3870.00 1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3870.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: O2

FORMULA: O2 NAME: O2

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	340.00		PURE37
CHARGE	1	IONIC CHARGE	0.0000		AQUEOUS
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	100.00		DEFAULT
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	-2.7945	KCAL/MOL	AQUEOUS
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	0.0000	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	1.6206	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000		DEFAULT
FREEZEPT1			-218.79	C	PURE37
GMUQQ	1	UNIQUAC MOLECULAR AREA PARAMETER	0.94000		PURE37
GMUQQ1	1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	0.94000		DEFAULT
GMUQR	1	UNIQUAC MOLECULAR VOLUME PARAMETER	0.85696		PURE37

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	0.0000	KCAL/MOL	PURE37
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	0.10605	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	0.0000	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	31.999		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.22180E-01		PURE37
PC	1	CRITICAL PRESSURE	5043.0	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.28925		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	48.999	CAL/MOL-K	AQUEOUS
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	0.30000		PURE37
TB	1	NORMAL BOILING POINT	-182.96	C	PURE37
TC	1	CRITICAL TEMPERATURE	-118.57	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	-218.79	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	28.022	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	73.400	CC/MOL	PURE37
VCRKT	1	VC FOR RACKETT MODEL	73.400	CC/MOL	DEFAULT
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	53.558	CC/MOL	PURE37
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.28800		PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$CPIGDP = A + B(C/T/SINH(C/T))^2 + D(E/T/COSH(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 6.95113
B = 2.39801
C = 2526.50
D = 2.23464
E = 1153.80

T RANGE = 50.00 TO 1500.00 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 86.6709

B = 0.329368

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -259.69 TO -229.37 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - \text{Tr})^B + C\text{Tr} + D\text{Tr}^2 + E\text{Tr}^3 \text{ where } \text{Tr} = T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

SET: 1 SOURCE: PURE37

A = 2.15152

B = 0.454200

C = -0.409600

D = 0.318300

E = 0.00000

T RANGE = -218.79 TO -118.57 C

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^{(1 + (1 - T/C)^D)})$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 3.91430

B = 0.287720

C = 154.580

D = 0.292400

E = 0.00000

T RANGE = 54.35 TO 154.58 K

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 44.5520

B = 0.00000

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -252.50 TO -252.50 C

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = -0.884325E-01
B = -0.118659E-02
C = 0.00000
D = 0.00000
E = 0.00000

T RANGE = -213.15 TO -123.15 C

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

KVDIP DIPPR vapor thermal conductivity

$$KVDIP = AT^B / (1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.386879E-03
B = 0.745600
C = 56.6990
D = 0.00000
E = 0.00000

T RANGE = 80.00 TO 2000.00 K

MULDIP DIPPR liquid viscosity

$$\ln(MULDIP) = A + B/T + C \ln(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = 2.76016
B = 94.0400
C = -1.20700
D = 0.00000
E = 0.00000

T RANGE = 54.36 TO 150.00 K

MUVDIP DIPPR vapor viscosity

$$MUVDIP = AT^B / (1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = 0.110100E-02
B = 0.563400
C = 96.3000
D = 0.00000
E = 0.00000

T RANGE = 54.35 TO 1500.00 K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\ln(PL) = A + B/(T + C) + DT + E \ln(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 44.3372
B = -1200.20
C = 0.00000
D = 0.00000
E = -6.43610
F = 0.284050E-01
G = 1.00000

T RANGE = 54.36 TO 154.58 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$\text{LN(PS)} = A + B/(T + C) + D \text{ LN}(T) + E T^F + G/T^2$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 140.692
B = 0.00000
C = 0.00000
D = 0.00000
E = 0.00000
F = 2.00000
G = 0.00000

T RANGE = 54.36 TO 54.36 K

SIGDIP DIPPR liquid surface tension

$\text{SIGDIP} = A(1 - T_r)^{(B + C T_r + D T_r^2 + E T_r^3)}$ where $T_r = T/T_c$

TEMP UNITS: C PROP UNITS: DYNE/CM

SET: 1 SOURCE: PURE37

A = 38.0140
B = 1.20980
C = 0.00000
D = 0.00000
E = 0.00000

T RANGE = -218.80 TO -118.57 C

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

VLBROC BRELVI-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: AQUEOUS

A = 73.3611
B = 0.00000

WATSOL WATER SOLUBILITY

$\text{LN(XWSOL)} = A + B/T + CT$

SET: 1 SOURCE: PURE37

A = -5.30000
B = -500.000
C = 0.00000

T RANGE = 200.00 TO 373.00

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 8.00000

NOATOM NUMBER OF OCCURENCES FOR EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 2.00000

UFGRP UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3830.00 1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

3830.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GROUP NUMBER NUMBER OF OCCURENCES

3830.00 1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3830.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: CO2

FORMULA: CO2 NAME: CO2

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	340.00		PURE37
CHARGE	1	IONIC CHARGE	0.0000		AQUEOUS
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT

CMPCLASS1	COMPONENT CLASS INDEX	110.00	DEFAULT
DCPLS 1	DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	3.4056	CAL/MOL-K PURE37
DGFORM 1	IDEAL GAS GIBBS ENERGY OF FORMATION	-94.194	KCAL/MOL PURE37
DGSFRM 1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL DEFAULT
DHAQFM 1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	-98.834	KCAL/MOL AQUEOUS
DHFORM 1	IDEAL GAS ENTHALPY OF FORMATION	-93.988	KCAL/MOL PURE37
DHSFRM 1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL DEFAULT
DHVLB 1	ENTHALPY OF VAPORIZATION AT TB	3.9100	KCAL/MOL PURE37
DLWC 1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000	DEFAULT
DVBLNC 1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000	DEFAULT
FREEZEPT1		-56.570 C	PURE37
GMUQQ 1	UNIQUAC MOLECULAR AREA PARAMETER	1.2920	PURE37
GMUQQ1 1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	1.2920	DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQR 1		UNIQUAC MOLECULAR VOLUME PARAMETER	1.2986		PURE37
HCOM 1		STANDARD ENTHALPY OF COMBUSTION AT 25 C	0.0000	KCAL/MOL	DEFAULT
HCTYPE 1		HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS 1		HEAT OF FUSION	2.1542	KCAL/MOL	PURE37
MUP 1		DIPOLE MOMENT	0.0000	DEBYE	PURE37
MW 1		MOLECULAR WEIGHT	44.010		PURE37
OMEGA 1		PITZER ACENTRIC FACTOR	0.22362		PURE37
PC 1		CRITICAL PRESSURE	7383.0	KPA	PURE37
RHOM 1		MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA 1		RACKETT PARAMETER	0.27256		PURE37
S025E 1		SUM OF ELEMENT ENTROPIES AT 25 C	50.370	CAL/MOL-K	AQUEOUS
SG 1		STANDARD SPECIFIC GRAVITY AT 60 F	0.30000		PURE37
TB 1		NORMAL BOILING POINT	-78.450	C	PURE37
TC 1		CRITICAL TEMPERATURE	31.060	C	PURE37

TPT 1 TRIPLE POINT TEMPERATURE -56.570 C PURE37

TREFHS 1 REFERENCE TEMPERATURE FOR SOLID 25.000 C DEFAULT
REFERENCE STATE

VB 1 LIQUID MOLAR VOLUME AT TB 35.019 CC/MOL PURE37

VC 1 CRITICAL VOLUME 94.000 CC/MOL PURE37

VCRKT 1 VC FOR RACKETT MODEL 94.000 CC/MOL DEFAULT

VLSTD 1 API STANDARD LIQUID MOLAR VOLUME 53.558 CC/MOL PURE37
AT 60 F

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.27400		PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 7.01490
B = 8.24974
C = 1428.00
D = 6.30553
E = 588.000
T RANGE = 50.00 TO 5000.00 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 16.5338
B = -0.221173E-02
C = -0.103911E-02
D = -0.777187E-05
E = -0.183887E-07
T RANGE = -248.15 TO -56.57 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - \text{Tr})^{(B + C\text{Tr} + D\text{Tr}^2 + E\text{Tr}^3)} \text{ where } \text{Tr} = T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 5.19012
B = 0.382000
C = -0.433900
D = 0.422130
E = 0.00000
T RANGE = -56.57 TO 31.06 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^{(1 + (1 - T/C)^D)})$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 2.76800
B = 0.262120
C = 304.210
D = 0.290800
E = 0.00000
T RANGE = 216.58 TO 304.21 K

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 30.3862
B = -0.871116E-01
C = -0.284700E-03
D = 0.00000
E = 0.00000
T RANGE = -130.05 TO -56.57 C

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.928976E-01
B = -0.104686E-02
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = -56.57 TO 26.85 C

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 3.17283
B = -0.383800
C = 964.000
D = 0.186000E+07

E = 0.00000
T RANGE = 194.67 TO 1500.00 K

MULDIP DIPPR liquid viscosity

$$\ln(\text{MULDIP}) = A + B/T + C \ln(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = 25.6828
B = -402.920
C = -4.68540
D = -0.691710E-25
E = 10.0000
T RANGE = 216.58 TO 303.15 K

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CP
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.214800E-02
B = 0.460000
C = 290.000
D = 0.00000
E = 0.00000
T RANGE = 194.67 TO 1500.00 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\ln(\text{PL}) = A + B/(T + C) + DT + E \ln(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 40.1092
B = -2839.00
C = 0.00000
D = 0.00000
E = -3.86390
F = 0.281120E-15
G = 6.00000
T RANGE = 216.58 TO 304.21 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\ln(\text{PS}) = A + B/(T + C) + D \ln(T) + ET^F + G/T^2$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 31.6832
B = -3434.80
C = 0.00000
D = -1.79630
E = 0.837570E-15
F = 6.00000
G = 0.00000
T RANGE = 75.36 TO 216.58 K

SIGDIP DIPPR liquid surface tension

$$\text{SIGDIP} = A(1 - \text{Tr})^B + C\text{Tr} + D\text{Tr}^2 + E\text{Tr}^3 \text{ where } \text{Tr} = T/T_c$$

TEMP UNITS: C PROP UNITS: DYNE/CM
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 84.1400
B = 1.28400
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = -56.57 TO 31.06 C

VLBROC BRELVI-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: AQUEOUS

A = 93.9446
B = 0.00000

WATSOL WATER SOLUBILITY

$$\text{LN}(\text{XWSOL}) = A + B/T + CT$$

SET: 1 SOURCE: PURE37

A = -5.30000
B = -500.000
C = 0.00000
T RANGE = 200.00 TO 373.00

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 6.00000
B = 8.00000

NOATOM NUMBER OF OCCURENCES FOR
EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 1.00000
B = 2.00000

UFGRP UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GROUP NUMBER	NUMBER OF OCCURENCES
3850.00	1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

3850.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3850.00 1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

3850.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: PROPYLEN

FORMULA: C3H6-2 NAME: C3H6-2

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	139.60		PURE37
CHARGE	1	IONIC CHARGE	0.0000		AQUEOUS
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	220.00		DEFAULT
DCPLS	1	DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	6.9986	CAL/MOL-K	PURE37
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	14.961	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	4.8319	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	4.4740	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000		DEFAULT

```

FREEZEPT1          -185.25  C      PURE37

GMUQQ  1  UNIQUAC MOLECULAR AREA PARAMETER  2.0240          PURE37

GMUQQ1 1  UNIQUAC SPECIAL AREA PARAMETER  2.0240          DEFAULT
      FOR PRIMARY ALCOHOLS
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQR	1	UNIQUAC MOLECULAR VOLUME PARAMETER	2.2465		PURE37
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	-460.06	KCAL/MOL	PURE37
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	3.0000		DEFAULT
HFUS	1	HEAT OF FUSION	0.70125	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	0.36575	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	42.081		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.13759		PURE37
PC	1	CRITICAL PRESSURE	4600.0	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.27753		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	97.750	CAL/MOL-K	AQUEOUS
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	0.52200		PURE37
TB	1	NORMAL BOILING POINT	-47.700	C	PURE37
TC	1	CRITICAL TEMPERATURE	91.700	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	-185.26	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	68.801	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	185.00	CC/MOL	PURE37
VCRKT	1	VC FOR RACKETT MODEL	185.00	CC/MOL	DEFAULT
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	80.857	CC/MOL	PURE37
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.28100		PURE37

ZWITTER 1 ZWITTERIONS IDENTIFIER 0.0000 DEFAULT

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 10.4739

B = 35.9702

C = 1398.80

D = 17.8547

E = 616.460

T RANGE = 130.00 TO 1500.00 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 2692.93

B = 47.7100

C = 0.318184

D = 0.940368E-03

E = 0.103537E-05

T RANGE = -259.15 TO -185.26 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - \text{Tr})^B + C\text{Tr} + D\text{Tr}^2 + E\text{Tr}^3 \text{ where } \text{Tr} = T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 6.02274

B = 0.337210

C = -0.183990

D = 0.223770

E = 0.00000

T RANGE = -185.26 TO 91.70 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^*(1 + (1 - T/C)^D))$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 1.44030

B = 0.268520

C = 364.850

D = 0.287750

E = 0.00000

T RANGE = 87.89 TO 364.85 K

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

$$A = 14.9839$$

$$B = -0.217540E-01$$

$$C = 0.00000$$

$$D = 0.00000$$

$$E = 0.00000$$

$$T \text{ RANGE} = -194.55 \text{ TO } -185.26 \text{ C}$$

HCSOL HYDROCARBON SOLUBILITY

$$\text{LN(XHSOL)} = A + B/T + CT$$

TEMP UNITS: C PROP UNITS:

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: DEFAULT

$$A = -8.47605$$

$$B = 0.00000$$

$$C = 0.00000$$

$$T \text{ RANGE} = -273.15 \text{ TO } 726.85 \text{ C}$$

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A(1 + Bt^{1/3} + Ct^{2/3} + Dt) \text{ where } t = 1 - T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

$$A = 0.858762E-01$$

$$B = -1.34090$$

$$C = 1.65450$$

$$D = 1.33340$$

$$E = 0.00000$$

$$T \text{ RANGE} = -185.26 \text{ TO } 67.34 \text{ C}$$

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

$$A = 0.386071E-04$$

$$B = 1.20180$$

$$C = 421.000$$

$$D = 0.00000$$

$$E = 0.00000$$

$$T \text{ RANGE} = 225.45 \text{ TO } 1000.00 \text{ K}$$

MULDIP DIPPR liquid viscosity

$$\text{LN(MULDIP)} = A + B/T + C \text{ LN}(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = -85.1742
B = 1907.30
C = 15.6390
D = -0.430980E-01
E = 1.00000
T RANGE = 87.89 TO 333.15 K

MUVDIP DIPPR vapor viscosity

$\text{MUVDIP} = AT^B / (1 + C/T + D/T^2)$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = 0.739190E-03
B = 0.542300
C = 263.730
D = 0.00000
E = 0.00000
T RANGE = 87.89 TO 1000.00 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$\text{LN(PL)} = A + B/(T + C) + DT + E \text{ LN}(T) + FT^G$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 36.9972
B = -3097.80
C = 0.00000
D = 0.00000
E = -3.44250
F = 0.999890E-16
G = 6.00000
T RANGE = 87.89 TO 364.85 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$\text{LN(PS)} = A + B/(T + C) + D \text{ LN}(T) + ET^F + G/T^2$

TEMP UNITS: C PROP UNITS: KPA

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 25.0692
B = -3403.70
C = 273.150
D = 0.00000
E = 0.00000
F = 0.00000
G = 0.00000
T RANGE = -235.26 TO -185.26 C

SIGDIP DIPPR liquid surface tension

$\text{SIGDIP} = A(1 - \text{Tr})^B + C\text{Tr} + D\text{Tr}^2 + E\text{Tr}^3$ where $\text{Tr} = T/T_c$

TEMP UNITS: C PROP UNITS: DYNE/CM

SET: 1 SOURCE: PURE37

A = 53.1180
B = 1.19930
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = -185.26 TO 91.70 C

VLBROC BRELVI-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: DEFAULT

A = 185.000
B = 0.00000

WATSOL WATER SOLUBILITY

$\text{LN}(\text{XWSOL}) = A + B/T + CT$

SET: 1 SOURCE: PURE37

A = 3.47154
B = -3028.13
C = 0.00000

T RANGE = 295.00 TO 359.00

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 6.00000
B = 1.00000

NOATOM NUMBER OF OCCURENCES FOR
EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 3.00000
B = 6.00000

UFGRP UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000
1070.00 1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000
1070.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000
1070.00 1.00000

UFG RPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000
1070.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: FORMA-01

FORMULA: CH2O NAME: CH2O

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	52.815		PURE37
CHARGE	1	IONIC CHARGE	0.0000		AQUEOUS
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	440.00		DEFAULT
DCPLS	1	DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	5.0238	CAL/MOL-K	PURE37
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	-24.506	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	-25.939	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	5.5003	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000		DEFAULT
FREEZEPT1			-118.00	C	PURE37
GMUQQ	1	UNIQUAC MOLECULAR AREA PARAMETER	1.1496		PURE37
GMUQQ1	1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	1.1496		DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQR	1	UNQUAC MOLECULAR VOLUME PARAMETER	1.2030		PURE37
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	-125.82	KCAL/MOL	PURE37
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	1.2993	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	2.3294	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	30.026		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.16789		PURE37
PC	1	CRITICAL PRESSURE	6590.0	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.22099		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	57.083	CAL/MOL-K	AQUEOUS
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	0.76771		PURE37
TB	1	NORMAL BOILING POINT	-19.300	C	PURE37
TC	1	CRITICAL TEMPERATURE	146.85	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	-118.00	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	36.490	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	85.100	CC/MOL	PURE37
VCRKT	1	VC FOR RACKETT MODEL	85.100	CC/MOL	DEFAULT
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	39.210	CC/MOL	PURE37

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.16100		PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 8.00205
B = 11.7976
C = 1928.00
D = 7.10041
E = 965.040
T RANGE = 298.15 TO 1500.00 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 12.7518
B = 0.349226E-01
C = -0.371214E-04
D = 0.00000
E = 0.00000
T RANGE = -223.15 TO -118.00 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - T_r)^{(B + CT_r + DT_r^2 + ET_r^3)} \text{ where } T_r = T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 7.06387
B = 0.982960E-01
C = 0.283730
D = 0.00000
E = 0.00000
T RANGE = -118.00 TO 146.85 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^{(1 + (1 - T/C)^D)})$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 3.89700
B = 0.331640
C = 420.000
D = 0.285710
E = 0.00000
T RANGE = 155.15 TO 420.00 K

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 30.8681
B = -0.318870E-01
C = 0.00000

D = 0.00000
E = 0.00000
T RANGE = -211.09 TO -118.00 C

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.162080
B = -0.464316E-03
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = -118.00 TO -19.30 C

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.448848E-05
B = 1.41700
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 253.85 TO 1000.00 K

MULDIP DIPPR liquid viscosity

$$\text{LN(MULDIP)} = A + B/T + C \text{ LN}(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = -0.751345
B = 603.360
C = -0.533780
D = 0.00000
E = 0.00000
T RANGE = 155.15 TO 253.85 K

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CP
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.159480E-01
B = 0.215160
C = 1151.10
D = 0.00000

E = 0.00000
T RANGE = 155.15 TO 1000.00 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\ln(PL) = A + B/(T + C) + DT + E \ln(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 42.4552
B = -3847.90
C = 0.00000
D = 0.00000
E = -4.09830
F = 0.463630E-16
G = 6.00000
T RANGE = 155.15 TO 420.00 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\ln(PS) = A + B/(T + C) + D \ln(T) + ET^F + G/T^2$$

TEMP UNITS: C PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 22.0982
B = -3896.80
C = 273.150
D = 0.00000
E = 0.00000
F = 0.00000
G = 0.00000
T RANGE = -218.00 TO -118.00 C

SIGDIP DIPPR liquid surface tension

$$\text{SIGDIP} = A(1 - Tr)^{(B + CTr + DTr^2 + ETr^3)} \text{ where } Tr = T/T_c$$

TEMP UNITS: C PROP UNITS: DYNE/CM

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 60.8360
B = 1.15290
C = -0.128150
D = 0.00000
E = 0.00000
T RANGE = -118.00 TO 146.85 C

VLBROC BRELVI-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: DEFAULT

A = 85.1000
B = 0.00000

WATSOL WATER SOLUBILITY

$$\ln(XWSOL) = A + B/T + CT$$

SET: 1 SOURCE: DEFAULT

A = 1.83479

B = -2433.82

C = 0.00000

T RANGE = 0.00 TO 960.16

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 6.00000

B = 1.00000

C = 8.00000

NOATOM NUMBER OF OCCURENCES FOR
EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 1.00000

B = 2.00000

C = 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: ACETALD

FORMULA: C2H4O-1 NAME: C2H4O-1

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	48.900		PURE37
CHARGE	1	IONIC CHARGE	0.0000		AQUEOUS
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	440.00		DEFAULT
DCPLS	1	DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	5.7106	CAL/MOL-K	PURE37
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	-32.913	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	-40.843	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	6.1956	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT

DVBLNC 1 CHAPMAN-ENSKOG-WILKE-LEE 1.0000 DEFAULT
 DIFFUSING COMPONENT FLAG

FREEZEPT1 -123.37 C PURE37

GMUQQ 1 UNIQUAC MOLECULAR AREA PARAMETER 1.7960 PURE37

GMUQQ1 1 UNIQUAC SPECIAL AREA PARAMETER 1.7960 DEFAULT
 FOR PRIMARY ALCOHOLS

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQR	1	UNIQUAC MOLECULAR VOLUME PARAMETER	1.9163		PURE37
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	-263.83	KCAL/MOL	PURE37
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	0.55173	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	2.6891	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	44.053		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.26249		PURE37
PC	1	CRITICAL PRESSURE	5570.0	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.23883		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	89.666	CAL/MOL-K	AQUEOUS
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	0.78460		PURE37
TB	1	NORMAL BOILING POINT	21.000	C	PURE37
TC	1	CRITICAL TEMPERATURE	192.85	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	-123.37	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	56.493	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	154.00	CC/MOL	PURE37
VCRKT	1	VC FOR RACKETT MODEL	154.00	CC/MOL	DEFAULT
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	56.282	CC/MOL	PURE37

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
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ZC 1 CRITICAL COMPRESSIBILITY FACTOR 0.22100 PURE37

ZWITTER 1 ZWITTERIONS IDENTIFIER 0.0000 DEFAULT

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 11.5246

B = 25.4729

C = 1992.90

D = 18.8332

E = 912.780

T RANGE = 298.15 TO 1500.00 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 14.8147

B = 0.122423E-01

C = -0.147743E-03

D = 0.577171E-07

E = 0.00000

T RANGE = -223.15 TO -123.37 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - \text{Tr})^B + C\text{Tr} + D\text{Tr}^2 + E\text{Tr}^3 \text{ where } \text{Tr} = T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 8.14178

B = 0.433170E-01

C = 0.215020

D = 0.237910

E = 0.00000

T RANGE = -123.37 TO 192.85 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^D(1 + (1 - T/C)^D))$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 1.71140

B = 0.263550

C = 466.000

D = 0.285710

E = 0.00000

T RANGE = 149.78 TO 466.00 K

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 21.4150

B = -0.228850E-01

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -213.24 TO -123.37 C

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.158467

B = -0.474867E-03

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -123.37 TO 21.00 C

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.940929E-07

B = 2.02790

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = 294.15 TO 1000.00 K

MULDIP DIPPR liquid viscosity

$$\text{LN(MULDIP)} = A + B/T + C \text{ LN}(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = -4.06824

B = 755.120

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = 149.78 TO 294.15 K

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = AT^B/(1 + C/T + D/T^2)$$

PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.197030E-01
B = 0.176460
C = 1564.60
D = 0.00000
E = 0.00000
T RANGE = 149.78 TO 1000.00 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\ln(PL) = A + B/(T + C) + DT + E \ln(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 46.0032
B = -4643.10
C = 0.00000
D = 0.00000
E = -4.50680
F = 0.270280E-16
G = 6.00000
T RANGE = 149.78 TO 466.00 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\ln(PS) = A + B/(T + C) + D \ln(T) + ET^F + G/T^2$$

TEMP UNITS: C PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 21.8982
B = -4414.00
C = 273.150
D = 0.00000
E = 0.00000
F = 0.00000
G = 0.00000
T RANGE = -223.37 TO -123.37 C

SIGDIP DIPPR liquid surface tension

$$\text{SIGDIP} = A(1 - Tr)^{(B + CTr + DTr^2 + ETr^3)} \text{ where } Tr = T/T_c$$

PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 77.1670
B = 1.42450
C = -0.198740
D = 0.00000
E = 0.00000
T RANGE = -123.37 TO 192.85 C

VLBROC BRELVIO-CONNELL

VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: DEFAULT

A = 154.000
B = 0.00000

WATSOL WATER SOLUBILITY

$\text{LN}(\text{XWSOL}) = A + B/T + CT$

SET: 1 SOURCE: DEFAULT

A = 2.13153
B = -2496.95
C = 0.00000
T RANGE = 0.00 TO 881.84

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 6.00000
B = 1.00000
C = 8.00000

NOATOM NUMBER OF OCCURENCES FOR EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 2.00000
B = 4.00000
C = 1.00000

UFGRP UNIFAC GROUP COUNT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000
1450.00 1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000
1450.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000
1450.00 1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000

1450.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: ACROL

FORMULA: C3H4O NAME: C3H4O

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	37.656		PURE37
CHARGE	1	IONIC CHARGE	0.0000		DEFAULT
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	440.00		DEFAULT
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	-13.566	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	-19.538	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	6.7833	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000		DEFAULT
FREEZEPT1			-87.700	C	PURE37
GMUQQ	1	UNIQUAC MOLECULAR AREA PARAMETER	2.5560		PURE37
GMUQQ1	1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	2.5560		DEFAULT
GMUQR	1	UNIQUAC MOLECULAR VOLUME PARAMETER	2.9018		PURE37

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
HCOM	1	STANDARD ENTHALPY OF COMBUSTION	-369.45	KCAL/MOL	PURE37

AT 25 C

HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000	DEFAULT
HFUS	1	HEAT OF FUSION	2.4362	KCAL/MOL PURE37
MUP	1	DIPOLE MOMENT	3.1178	DEBYE PURE37
MW	1	MOLECULAR WEIGHT	56.064	PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.31983	PURE37
PC	1	CRITICAL PRESSURE	5000.0	KPA PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.24084	PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	0.0000	CAL/MOL-K DEFAULT
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	0.83651	PURE37
TB	1	NORMAL BOILING POINT	52.690	C PURE37
TC	1	CRITICAL TEMPERATURE	232.85	C PURE37
TPT	1	TRIPLE POINT TEMPERATURE	-87.700	C PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	69.765	CC/MOL PURE37
VC	1	CRITICAL VOLUME	197.00	CC/MOL PURE37
VCRKT	1	VC FOR RACKETT MODEL	197.00	CC/MOL DEFAULT
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	67.190	CC/MOL PURE37
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.23400	PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000	DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 13.6188

B = 21.9332

C = 767.470

D = 9.20846

E = 2375.40

T RANGE = 298.15 TO 1500.00 K

DHVLDP DIPPR heat of vaporization

DHVLDP = $A(1 - Tr)^{(B + CTr + DTr^2 + ETr^3)}$ where $Tr = T/T_c$

TEMP UNITS: C PROP UNITS: KCAL/MOL

SET: 1 SOURCE: PURE37

A = 15.9069

B = 2.24430

C = -2.91920

D = 1.11130

E = 0.00000

T RANGE = -87.70 TO 232.85 C

DNLDIP DIPPR liquid density

DNLDIP = $A/(B^{(1 + (1 - T/C)^D)})$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 1.32610

B = 0.261240

C = 506.000

D = 0.248900

E = 0.00000

T RANGE = 185.45 TO 506.00 K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

DNSDIP DIPPR solid density

DNSDIP = $A + BT + CT^2 + DT^3 + ET^4$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 17.5685

B = -0.145140E-01

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -198.97 TO -87.70 C

KLDIP DIPPR liquid thermal conductivity

KLDIP = $A + BT + CT^2 + DT^3 + ET^4$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.144012

B = -0.323646E-03

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -87.70 TO 52.69 C

KVDIP DIPPR vapor thermal conductivity

KVDIP = $AT^B/(1 + C/T + D/T^2)$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.207206E-01
B = 0.328500
C = 1325.30
D = 577830.
E = 0.00000
T RANGE = 325.84 TO 1000.00 K
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

MULDIP DIPPR liquid viscosity

$$\text{LN}(\text{MULDIP}) = A + B/T + C \text{LN}(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = -5.12424
B = 867.340
C = 0.195340
D = 0.00000
E = 0.00000
T RANGE = 185.45 TO 353.22 K

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = 0.652300E-03
B = 0.579000
C = 410.800
D = 0.00000
E = 0.00000
T RANGE = 185.45 TO 1000.00 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\text{LN}(\text{PL}) = A + B/(T + C) + DT + E \text{LN}(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 131.492
B = -7122.70
C = 0.00000
D = 0.00000
E = -19.6380
F = 0.264470E-01
G = 1.00000
T RANGE = 185.45 TO 506.00 K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\text{LN}(\text{PS}) = A + B/(T + C) + D \text{LN}(T) + ET^F + G/T^2$$

TEMP UNITS: C PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 23.1822
B = -5147.70
C = 273.150
D = 0.00000
E = 0.00000
F = 0.00000
G = 0.00000
T RANGE = -137.70 TO -87.70 C

SIGDIP DIPPR liquid surface tension

$\text{SIGDIP} = A(1 - T_r)^{(B + C T_r + D T_r^2 + E T_r^3)}$ where $T_r = T/T_c$

TEMP UNITS: C PROP UNITS: DYNE/CM

SET: 1 SOURCE: PURE37

A = 72.3510
B = 1.28130
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = -87.70 TO 232.85 C

VLBROC BRELVI-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: DEFAULT

A = 197.000
B = 0.00000

WATSOL WATER SOLUBILITY

$\text{LN}(\text{XWSOL}) = A + B/T + CT$
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: DEFAULT

A = 2.13296
B = -2464.43
C = 0.00000
T RANGE = 0.00 TO 869.91

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 6.00000
B = 1.00000
C = 8.00000

NOATOM NUMBER OF OCCURENCES FOR
EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 3.00000
B = 4.00000
C = 1.00000

UFGRP UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1070.00	1.00000
1450.00	1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

1070.00	1.00000
1450.00	1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1070.00	1.00000
1450.00	1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1070.00	1.00000
1450.00	1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: H2O

FORMULA: H2O NAME: H2O

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	10.000		PURE37
CHARGE	1	IONIC CHARGE	0.0000		DEFAULT
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	100.00		DEFAULT
DCPLS	1	DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	9.0829	CAL/MOL-K	PURE37
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	-54.593	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	-56.549	KCAL/MOL	SOLIDS

DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	-57.757	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	-69.963	KCAL/MOL	SOLIDS
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	9.7195	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000	DEFAULT	
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000	DEFAULT	
FREEZEPT1			-0.56843E-13 C	PURE37	
GMUQQ	1	UNIQUAC MOLECULAR AREA PARAMETER	1.4000		PURE37
GMUQQ1	1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	1.4000		DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQR	1	UNIQUAC MOLECULAR VOLUME PARAMETER	0.92000		PURE37
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	0.0000	KCAL/MOL	DEFAULT
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	1.4335	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	1.8497	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	18.015		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.34486		PURE37
PC	1	CRITICAL PRESSURE	22064.	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.24317		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	0.0000	CAL/MOL-K	DEFAULT
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	1.0000		PURE37
TB	1	NORMAL BOILING POINT	100.00	C	PURE37
TC	1	CRITICAL TEMPERATURE	373.95	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	0.10000E-01	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	18.831	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	55.947	CC/MOL	PURE37

VCRKT 1 VC FOR RACKETT MODEL 55.947 CC/MOL DEFAULT
 VLSTD 1 API STANDARD LIQUID MOLAR VOLUME 18.050 CC/MOL PURE37
 AT 60 F
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.22900		PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 7.96862
 B = 6.39868
 C = 2610.50
 D = 2.12477
 E = 1169.00
 T RANGE = 100.00 TO 2273.15 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 9.10494
 B = 0.335626E-01
 C = 0.00000
 D = 0.00000
 E = 0.00000
 T RANGE = -270.00 TO -0.00 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - \text{Tr})^{(B + C\text{Tr} + D\text{Tr}^2 + E\text{Tr}^3)} \text{ where } \text{Tr} = T/\text{Tc}$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 13.5187
 B = 0.612040
 C = -0.625700
 D = 0.398800
 E = 0.00000
 T RANGE = 0.01 TO 373.95 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A + Bt^{0.35} + Ct^{(2/3)} + Dt + Et^{(4/3)}$$

where $t = 1 - T/T_c$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 17.8630

B = 58.6060

C = -95.3960

D = 213.890

E = -141.260

T RANGE = 0.01 TO 373.95 C

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 50.8883

B = -0.784090E-02

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = -40.00 TO -0.00 C

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.487653

B = 0.148671E-02

C = -0.563457E-05

D = 0.160017E-08

E = 0.00000

T RANGE = 0.01 TO 360.00 C

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = AT^B / (1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.533457E-05

B = 1.39730

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = 273.16 TO 1073.15 K

MULDIP DIPPR liquid viscosity

$$\text{LN(MULDIP)} = A + B/T + C \text{ LN}(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = -45.9352
B = 3703.60
C = 5.86600
D = -0.587900E-28
E = 10.0000
T RANGE = 273.16 TO 646.15 K

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = \frac{AT^B}{(1 + C/T + D/T^2)}$$

TEMP UNITS: K PROP UNITS: CP
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.170960E-04
B = 1.11460
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 273.16 TO 1073.15 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\text{LN(PL)} = A + B/(T + C) + DT + E \text{ LN}(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 66.7412
B = -7258.20
C = 0.00000
D = 0.00000
E = -7.30370
F = 0.416530E-05
G = 2.00000
T RANGE = 273.16 TO 647.10 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\text{LN(PS)} = A + B/(T + C) + D \text{ LN}(T) + ET^F + G/T^2$$

TEMP UNITS: C PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 21.8582
B = -6109.20
C = 273.150
D = 0.00000
E = 0.00000
F = 0.00000
G = 0.00000
T RANGE = -123.85 TO 0.01 C

SIGDIP DIPPR liquid surface tension

$$\text{SIGDIP} = A(1 - T_r)^{(B + CT_r + DT_r^2 + ET_r^3)} \text{ where } T_r = T/T_c$$

TEMP UNITS: C PROP UNITS: DYNE/CM
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 177.660
B = 2.56700
C = -3.33770
D = 1.96990
E = 0.00000
T RANGE = 0.01 TO 373.95 C

VLBROC BRELVI-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: DEFAULT

A = 55.9472
B = 0.00000

WATSOL WATER SOLUBILITY

$\text{LN}(\text{XWSOL}) = A + B/T + CT$

SET: 1 SOURCE: DEFAULT

A = 1.76832
B = -2282.98
C = 0.00000
T RANGE = 0.00 TO 924.91

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 1.00000
B = 8.00000

NOATOM NUMBER OF OCCURENCES FOR
EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 2.00000
B = 1.00000

UFGRP UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GROUP NUMBER NUMBER OF OCCURENCES

1300.00 1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

1300.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1300.00 1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1300.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: AC-ACET

FORMULA: C2H4O2-1 NAME: C2H4O2-1

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	2.6000		PURE37
CHARGE	1	IONIC CHARGE	0.0000		AQUEOUS
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	450.00		DEFAULT
DCPLS	1	DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	6.5204	CAL/MOL-K	PURE37
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	-89.472	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	-116.10	KCAL/MOL	AQUEOUS
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	-103.37	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	5.5840	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000		DEFAULT
FREEZEPT1			16.660	C	PURE37
GMUQQ	1	UNIQUAC MOLECULAR AREA PARAMETER	2.0720		PURE37
GMUQQ1	1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	2.0720		DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQR	1	UNQUAC MOLECULAR VOLUME PARAMETER	2.1951		PURE37
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	-194.56	KCAL/MOL	PURE37
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	2.8017	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	1.7388	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	60.053		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.46652		PURE37
PC	1	CRITICAL PRESSURE	5786.0	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.22401		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	114.17	CAL/MOL-K	AQUEOUS
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	1.0553		PURE37
TB	1	NORMAL BOILING POINT	117.90	C	PURE37
TC	1	CRITICAL TEMPERATURE	318.80	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	16.660	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	63.931	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	177.00	CC/MOL	PURE37
VCRKT	1	VC FOR RACKETT MODEL	177.00	CC/MOL	DEFAULT
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	57.630	CC/MOL	PURE37

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.20800		PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 9.60161
B = 32.6622
C = 1262.00
D = 16.7264
E = 569.700
T RANGE = 50.00 TO 1500.00 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 20.6285
B = 0.107796
C = 0.773447E-03
D = 0.253296E-05
E = 0.00000
T RANGE = -233.15 TO 16.66 C

DHVLDP DIPPR heat of vaporization

$$\text{DHVLDP} = A(1 - T_r)^{(B + CT_r + DT_r^2 + ET_r^3)} \text{ where } T_r = T/T_c$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 14.6353
B = 3.68340
C = -6.19310
D = 2.97770
E = 0.00000
T RANGE = 16.66 TO 318.80 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^{(1 + (1 - T/C)^D)})$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 1.44860
B = 0.258920
C = 591.950
D = 0.252900
E = 0.00000
T RANGE = 289.81 TO 591.95 K

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 21.2392
B = -0.965700E-02
C = 0.00000

D = 0.00000
E = 0.00000
T RANGE = -157.23 TO 16.66 C

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.140932
B = -0.157696E-03
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 16.66 TO 117.90 C

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.278485E-01
B = -0.567106E-03
C = 0.125282E-04
D = -0.470490E-07
E = 0.00000
T RANGE = 117.90 TO 185.00 C

MULDIP DIPPR liquid viscosity

$$\text{LN(MULDIP)} = A + B/T + C \text{ LN}(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = -2.12224
B = 1212.30
C = -0.322000
D = 0.00000
E = 0.00000
T RANGE = 289.81 TO 391.05 K

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = AT^B / (1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CP
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.156400E-04
B = 1.07800
C = 0.00000
D = 0.00000

E = 0.00000
T RANGE = 289.81 TO 1000.00 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\ln(PL) = A + B/(T + C) + DT + E \ln(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 46.3622
B = -6304.50
C = 0.00000
D = 0.00000
E = -4.29850
F = 0.888650E-17
G = 6.00000
T RANGE = 289.81 TO 591.95 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\ln(PS) = A + B/(T + C) + D \ln(T) + ET^F + G/T^2$$

TEMP UNITS: C PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 27.8282
B = -7993.50
C = 273.150
D = 0.00000
E = 0.00000
F = 0.00000
G = 0.00000
T RANGE = -50.00 TO 16.66 C

SIGDIP DIPPR liquid surface tension

$$\text{SIGDIP} = A(1 - Tr)^{(B + CTr + DTr^2 + ETr^3)} \text{ where } Tr = T/T_c$$

TEMP UNITS: C PROP UNITS: DYNE/CM

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 57.5020
B = 1.07690
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 16.66 TO 318.80 C

VLBROC BRELVI-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: AQUEOUS

A = 170.831
B = 0.00000

WATSOL WATER SOLUBILITY

$$\ln(XWSOL) = A + B/T + CT$$

SET: 1 SOURCE: DEFAULT

A = 1.68148

B = -2234.50

C = 0.00000

T RANGE = 0.00 TO 938.28

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 6.00000

B = 1.00000

C = 8.00000

NOATOM NUMBER OF OCCURENCES FOR EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 2.00000

B = 4.00000

C = 2.00000

UFGRP UNIFAC GROUP COUNT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000

1955.00 1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000

1955.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000

1955.00 1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1015.00 1.00000

1955.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: AC-ACRY
 FORMULA: C3H4O2-1 NAME: C3H4O2-1

SCALAR PARAMETERS

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
API	1	STANDARD API GRAVITY	3.5019		PURE37
CHARGE	1	IONIC CHARGE	0.0000		DEFAULT
CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
CMPCLASS1		COMPONENT CLASS INDEX	450.00		DEFAULT
DCPLS	1	DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	7.2698	CAL/MOL-K	PURE37
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	-68.525	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	-80.505	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	6.7843	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000		DEFAULT
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000		DEFAULT
FREEZEPT1			13.000	C	PURE37
GMUQQ	1	UNIUQAC MOLECULAR AREA PARAMETER	2.4000		PURE37
GMUQQ1	1	UNIUQAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	2.4000		DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQR	1	UNIUQAC MOLECULAR VOLUME PARAMETER	2.6467		PURE37
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	-316.99	KCAL/MOL	PURE37
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	2.6584	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	1.4600	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	72.064		PURE37

OMEGA	1	PITZER ACENTRIC FACTOR	0.53832		PURE37
PC	1	CRITICAL PRESSURE	5660.0	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.24458		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	0.0000	CAL/MOL-K	DEFAULT
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	1.0481		PURE37
TB	1	NORMAL BOILING POINT	141.00	C	PURE37
TC	1	CRITICAL TEMPERATURE	341.85	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	13.000	C	PURE37
TREFHS	1	REFERENCE TEMPERATURE FOR SOLID REFERENCE STATE	25.000	C	DEFAULT
VB	1	LIQUID MOLAR VOLUME AT TB	79.623	CC/MOL	PURE37
VC	1	CRITICAL VOLUME	208.00	CC/MOL	PURE37
VCRKT	1	VC FOR RACKETT MODEL	208.00	CC/MOL	DEFAULT
VLSTD	1	API STANDARD LIQUID MOLAR VOLUME AT 60 F	68.927	CC/MOL	PURE37

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.23000		PURE37
ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT

TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$\text{CPIGDP} = A + B(C/T/\text{SINH}(C/T))^2 + D(E/T/\text{COSH}(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 14.4717

B = 32.7291

C = 1647.50

D = 24.9498

E = 751.490

T RANGE = 250.00 TO 1500.00 K

CPSDIP DIPPR solid heat capacity

$$\text{CPSDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 0.125000E+07

B = 0.792670
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 50.00 TO 286.15 K

DHVLDP DIPPR heat of vaporization

$DHVLDP = A(1 - Tr)^{(B + CTr + DTr^2 + ETr^3)}$ where $Tr = T/T_c$

TEMP UNITS: C PROP UNITS: KCAL/MOL
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 10.4509
B = 2.25710
C = -4.51160
D = 2.57380
E = 0.00000
T RANGE = 13.00 TO 341.85 C

DNLDIP DIPPR liquid density

$DNLDIP = A/(B^{(1 + (1 - T/C)^D)})$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 1.24140
B = 0.258220
C = 615.000
D = 0.307010
E = 0.00000
T RANGE = 286.15 TO 615.00 K

DNSDIP DIPPR solid density

$DNSDIP = A + BT + CT^2 + DT^3 + ET^4$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 17.9840
B = 0.00000
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = -273.15 TO -273.15 C

KLDIP DIPPR liquid thermal conductivity

$KLDIP = A + BT + CT^2 + DT^3 + ET^4$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.141683
B = -0.249699E-03

C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 13.00 TO 211.35 C

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = AT^B / (1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.796647E-03
B = 0.703500
C = 627.580
D = 112460.
E = 0.00000
T RANGE = 414.15 TO 1000.00 K

MULDIP DIPPR liquid viscosity

$$\text{LN(MULDIP)} = A + B/T + C \text{ LN}(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

A = -21.2122
B = 2280.20
C = 2.39560
D = 0.00000
E = 0.00000
T RANGE = 286.15 TO 460.00 K

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = AT^B / (1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CP
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.171540E-03
B = 0.741800
C = 138.400
D = 0.00000
E = 0.00000
T RANGE = 286.15 TO 1000.00 K

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\text{LN(PL)} = A + B/(T + C) + DT + E \text{ LN}(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = 39.8372
B = -6587.10
C = 0.00000
D = 0.00000
E = -3.22080
F = 0.522530E-06
G = 2.00000
T RANGE = 286.15 TO 615.00 K

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\text{LN(PS)} = A + B/(T + C) + D \text{ LN}(T) + E T^F + G/T^2$$

TEMP UNITS: C PROP UNITS: KPA

SET: 1 SOURCE: PURE37

A = -68.6978

B = 18448.0

C = 273.150

D = 0.00000

E = 0.00000

F = 0.00000

G = 0.00000

T RANGE = -0.00 TO 3.50 C

SIGDIP DIPPR liquid surface tension

$$\text{SIGDIP} = A(1 - T_r)^{(B + C T_r + D T_r^2 + E T_r^3)} \text{ where } T_r = T/T_c$$

TEMP UNITS: C PROP UNITS: DYNE/CM

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 64.1000

B = 1.25140

C = 0.00000

D = 0.00000

E = 0.00000

T RANGE = 13.00 TO 341.85 C

VLBROC BRELV I-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: DEFAULT

A = 208.000

B = 0.00000

WATSOL WATER SOLUBILITY

$$\text{LN(XWSOL)} = A + B/T + CT$$

SET: 1 SOURCE: DEFAULT

A = 1.84762

B = -2278.80

C = 0.00000

T RANGE = 0.00 TO 894.48

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 6.00000

B = 1.00000

C = 8.00000

NOATOM NUMBER OF OCCURENCES FOR
EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 3.00000
B = 4.00000
C = 2.00000

UFGRP UNIFAC GROUP COUNT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1070.00 1.00000
1955.00 1.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

1070.00 1.00000
1955.00 1.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1070.00 1.00000
1955.00 1.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1070.00 1.00000
1955.00 1.00000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PURE COMPONENT PARAMETERS

COMPONENT ID: HIDROQUI

FORMULA: C6H6O2 NAME: C6H6O2

SCALAR PARAMETERS

PARAM	SET	DESCRIPTIONS	VALUE	UNITS	SOURCE
NAME	NO.				

API	1	STANDARD API GRAVITY	-24.217		PURE37
-----	---	----------------------	---------	--	--------

CHARGE	1	IONIC CHARGE	0.0000		DEFAULT
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CHI	1	STIEL POLAR FACTOR	0.0000		DEFAULT
-----	---	--------------------	--------	--	---------

CMPCLASS1		COMPONENT CLASS INDEX	414.00		DEFAULT
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DCPLS	1	DIFFERENCE BETWEEN LIQUID AND SOLID CP AT TRIPLE POINT	12.757	CAL/MOL-K	PURE37
DGFORM	1	IDEAL GAS GIBBS ENERGY OF FORMATION	-44.378	KCAL/MOL	PURE37
DGSFRM	1	SOLID GIBBS ENERGY OF FORMATION	-52.068	KCAL/MOL	PURE37
DHAQFM	1	AQUEOUS INFINITE DILUTION ENTHALPY OF FORMATION	0.0000	KCAL/MOL	DEFAULT
DHFORM	1	IDEAL GAS ENTHALPY OF FORMATION	-64.345	KCAL/MOL	PURE37
DHSFRM	1	SOLID ENTHALPY OF FORMATION	-87.059	KCAL/MOL	PURE37
DHVLB	1	ENTHALPY OF VAPORIZATION AT TB	14.852	KCAL/MOL	PURE37
DLWC	1	WILKE-CHANG DIFFUSING-COMPONENT FLAG	1.0000	DEFAULT	
DVBLNC	1	CHAPMAN-ENSKOG-WILKE-LEE DIFFUSING COMPONENT FLAG	1.0000	DEFAULT	
FREEZEPT1		170.55 C		PURE37	
GMUQQ	1	UNIQUAC MOLECULAR AREA PARAMETER	3.0080		PURE37
GMUQQ1	1	UNIQUAC SPECIAL AREA PARAMETER FOR PRIMARY ALCOHOLS	3.0080		DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
GMUQR	1	UNIQUAC MOLECULAR VOLUME PARAMETER	3.9156		PURE37
HCOM	1	STANDARD ENTHALPY OF COMBUSTION AT 25 C	-650.14	KCAL/MOL	PURE37
HCTYPE	1	HYDROCARBON COMP CLASS INDEX	0.0000		DEFAULT
HFUS	1	HEAT OF FUSION	6.4727	KCAL/MOL	PURE37
MUP	1	DIPOLE MOMENT	1.4030	DEBYE	PURE37
MW	1	MOLECULAR WEIGHT	110.11		PURE37
OMEGA	1	PITZER ACENTRIC FACTOR	0.48584		PURE37
PC	1	CRITICAL PRESSURE	5891.0	KPA	PURE37
RHOM	1	MASS DENSITY	0.0000	KG/CUM	DEFAULT
RKTZRA	1	RACKETT PARAMETER	0.24548		PURE37
S025E	1	SUM OF ELEMENT ENTROPIES AT 25 C	0.0000	CAL/MOL-K	DEFAULT
SG	1	STANDARD SPECIFIC GRAVITY AT 60 F	1.3189		PURE37
TB	1	NORMAL BOILING POINT	286.05	C	PURE37
TC	1	CRITICAL TEMPERATURE	565.65	C	PURE37
TPT	1	TRIPLE POINT TEMPERATURE	170.55	C	PURE37

TREFHS 1 REFERENCE TEMPERATURE FOR SOLID 25.000 C DEFAULT
REFERENCE STATE

VB 1 LIQUID MOLAR VOLUME AT TB 104.17 CC/MOL PURE37

VC 1 CRITICAL VOLUME 291.00 CC/MOL PURE37

VCRKT 1 VC FOR RACKETT MODEL 291.00 CC/MOL DEFAULT

VLSTD 1 API STANDARD LIQUID MOLAR VOLUME 83.695 CC/MOL PURE37
AT 60 F

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PARAM NAME	SET NO.	DESCRIPTIONS	VALUE	UNITS	SOURCE
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ZC	1	CRITICAL COMPRESSIBILITY FACTOR	0.24600		PURE37
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ZWITTER	1	ZWITTERIONS IDENTIFIER	0.0000		DEFAULT
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TEMPERATURE DEPENDENT PARAMETERS

CPIGDP DIPPR ideal gas heat capacity

$$CPIGDP = A + B(C/T/SINH(C/T))^2 + D(E/T/COSH(E/T))^2$$

TEMP UNITS: K PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 21.4555

B = 42.6125

C = 719.470

D = 17.4694

E = 2489.50

T RANGE = 298.15 TO 1500.00 K

CPSDIP DIPPR solid heat capacity

$$CPSDIP = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: CAL/MOL-K

SET: 1 SOURCE: PURE37

A = 29.4945

B = 0.107177

C = 0.354041E-04

D = 0.00000

E = 0.00000

T RANGE = -223.15 TO 170.55 C

DHVLDP DIPPR heat of vaporization

$$DHVLDP = A(1 - Tr)^{(B + CTr + DTr^2 + ETr^3)} \text{ where } Tr = T/Tc$$

TEMP UNITS: C PROP UNITS: KCAL/MOL

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 16.5456

B = -1.31440
C = 3.07500
D = -1.43390
E = 0.00000
T RANGE = 170.55 TO 565.65 C

DNLDIP DIPPR liquid density

$$\text{DNLDIP} = A/(B^{(1 + (1 - T/C)^D)})$$

TEMP UNITS: K PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 0.844690
B = 0.245510
C = 838.800
D = 0.285710
E = 0.00000
T RANGE = 443.70 TO 838.80 K

DNSDIP DIPPR solid density

$$\text{DNSDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KMOL/CUM

SET: 1 SOURCE: PURE37

A = 12.1107
B = -0.158630E-02
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = -95.67 TO 170.55 C

KLDIP DIPPR liquid thermal conductivity

$$\text{KLDIP} = A + BT + CT^2 + DT^3 + ET^4$$

TEMP UNITS: C PROP UNITS: KCAL-M/HR-SQM-K

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 0.133359
B = -0.818555E-04
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 170.55 TO 286.05 C

KVDIP DIPPR vapor thermal conductivity

$$\text{KVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: KCAL-M/HR-SQM-K

SET: 1 SOURCE: PURE37

A = 0.262416E-05
B = 1.44300
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 559.20 TO 1000.00 K

MULDIP DIPPR liquid viscosity

$$\ln(\text{MULDIP}) = A + B/T + C \ln(T) + DT^E$$

TEMP UNITS: K PROP UNITS: CP

SET: 1 SOURCE: PURE37

$$A = -94.9422$$

$$B = 8851.10$$

$$C = 12.3170$$

$$D = 0.00000$$

$$E = 0.00000$$

$$T \text{ RANGE} = 443.70 \text{ TO } 559.20 \text{ K}$$

MUVDIP DIPPR vapor viscosity

$$\text{MUVDIP} = AT^B/(1 + C/T + D/T^2)$$

TEMP UNITS: K PROP UNITS: CP

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

$$A = 0.625210E-01$$

$$B = 0.965350E-01$$

$$C = 4517.10$$

$$D = 0.00000$$

$$E = 0.00000$$

$$T \text{ RANGE} = 443.70 \text{ TO } 1000.00 \text{ K}$$

PLXANT EXTENDED ANTOINE VAPOR PRESSURE

$$\ln(PL) = A + B/(T + C) + DT + E \ln(T) + FT^G$$

TEMP UNITS: K PROP UNITS: KPA

SET: 1 SOURCE: PURE37

$$A = 105.142$$

$$B = -14182.0$$

$$C = 0.00000$$

$$D = 0.00000$$

$$E = -11.8860$$

$$F = 0.134850E-17$$

$$G = 6.00000$$

$$T \text{ RANGE} = 443.70 \text{ TO } 838.80 \text{ K}$$

PSXANT EXTENDED SOLID ANTOINE VAPOR PRE

$$\ln(PS) = A + B/(T + C) + D \ln(T) + ET^F + G/T^2$$

TEMP UNITS: C PROP UNITS: KPA

SET: 1 SOURCE: PURE37

$$A = 29.3022$$

$$B = -12676.0$$

$$C = 273.150$$

$$D = 0.00000$$

$$E = 0.00000$$

$$F = 0.00000$$

$$G = 0.00000$$

$$T \text{ RANGE} = 67.85 \text{ TO } 170.55 \text{ C}$$

SIGDIP DIPPR liquid surface tension

SIGDIP = $A(1 - Tr)^B + CTr + DTr^2 + ETr^3$ where $Tr = T/T_c$

TEMP UNITS: C PROP UNITS: DYNE/CM
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

A = 99.0110
B = 1.24940
C = 0.00000
D = 0.00000
E = 0.00000
T RANGE = 170.55 TO 565.65 C

VLBROC BRELVI-O-CONNELL
VOLUME PARAMETER

TEMP UNITS: C PROP UNITS: CC/MOL

SET: 1 SOURCE: DEFAULT

A = 291.000
B = 0.00000

WATSOL WATER SOLUBILITY

$\ln(XWSOL) = A + B/T + CT$

SET: 1 SOURCE: DEFAULT

A = 1.73348
B = -2135.65
C = 0.00000
T RANGE = 0.00 TO 877.61

VECTOR PARAMETERS

ATOMNO ATOMIC NUMBER OF ALL ELEMENTS

SET: 1 SOURCE: PURE37

A = 6.00000
B = 1.00000
C = 8.00000

NOATOM NUMBER OF OCCURENCES FOR
EACH TYPE OF ELEMENT

SET: 1 SOURCE: PURE37

A = 6.00000
B = 6.00000
C = 2.00000

UFGRP UNIFAC GROUP COUNT
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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1105.00 4.00000

1350.00 2.00000

SET: 2 SOURCE: DEFAULT

GROUP NUMBER NUMBER OF OCCURENCES

1105.00 4.00000
1350.00 2.00000

UFGRPD DORTMUND-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1105.00 4.00000
1350.00 2.00000

UFGRPL LYNGBY-UNIFAC GROUP COUNT

SET: 1 SOURCE: PURE37

GROUP NUMBER NUMBER OF OCCURENCES

1105.00 4.00000
1100.00 2.00000
1200.00 2.00000

BINARY PARAMETERS

HENRY HENRY-S CONSTANTS

$LN(H_{IJ}) = A_{IJ} + B_{IJ}/T + C_{IJ} LN(T) + D_{IJ} T + E_{IJ} / T^2$

THIS PARAMETER IS UNSYMMETRIC, BUT ONLY VALUE I-J ALLOWED

UNITS: KPA

SET: 1

COMP I COMP J VALUE I-J

N2 PROPYLEN $A_{ij} = 104.231$
 $B_{ij} = -2056.40$
 $C_{ij} = -16.0110$
 $D_{ij} = 0.00000$
 $G_{ij} = 0.00000$

T RANGE = 79.05 TO 90.50 K

SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

N2 H2O $A_{ij} = 169.599$
 $B_{ij} = -8432.77$
 $C_{ij} = -21.5580$
 $D_{ij} = -0.843624E-02$
 $G_{ij} = 0.00000$

T RANGE = 273.00 TO 346.00 K

SOURCE = INPUT

N2 AC-ACET $A_{ij} = 12.5781$
 $B_{ij} = 74.0530$
 $C_{ij} = 0.00000$
 $D_{ij} = 0.00000$
 $G_{ij} = 0.00000$

T RANGE = 293.15 TO 298.15 K
SOURCE = INPUT

ARGON H2O Aij = 174.083
Bij = -8137.13
Cij = -23.2547
Dij = 0.306357E-02
Gij = 0.00000

T RANGE = 274.00 TO 347.00 K
SOURCE = INPUT

O2 H2O Aij = 149.013
Bij = -7775.06
Cij = -18.3974
Dij = -0.944354E-02
Gij = 0.00000

T RANGE = 274.00 TO 348.00 K
SOURCE = INPUT

O2 AC-ACET Aij = 12.3217
Bij = 0.00000
Cij = 0.00000
Dij = 0.00000
Gij = 0.00000

T RANGE = 20.00 TO 20.00 C
SOURCE = INPUT

CO2 H2O Aij = 163.805
Bij = -8477.71
Cij = -21.9574
Dij = 0.578075E-02
Gij = 0.00000

T RANGE = 273.00 TO 500.00 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

CO2 AC-ACET Aij = -71.5528
Bij = 2162.30
Cij = 12.8890
Dij = 0.00000
Gij = 0.00000

T RANGE = 291.15 TO 309.15 K
SOURCE = INPUT

PROPYLEN H2O Aij = 303.779
Bij = -15567.4
Cij = -41.7376
Dij = 0.00000
Gij = 0.00000

T RANGE = 294.00 TO 378.00 K
SOURCE = INPUT

UNIQ UNIQUAC BINARY PARAMETERS

$$\text{LN}(\text{TAUIJ}) = \text{AIJ} + \text{BIJ}/\text{T} + \text{CIJ LN}(\text{T}) + \text{DIJ T} + \text{EIJ} / \text{T}^2$$

UNITS: K

SET: 1

COMP I	COMP J	VALUE I-J	VALUE J-I
--------	--------	-----------	-----------

N2 ARGON Aij = 0.00000 Aji = 0.00000
Bij = 22.9368 Bji = -18.4695
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

N2 O2 Aij = 0.00000 Aji = 0.00000
Bij = -40.0672 Bji = 34.5380
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

N2 CO2 Aij = 0.00000 Aji = 0.00000
Bij = -69.0353 Bji = 3.25093
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

N2 PROPYLEN Aij = 0.00000 Aji = 0.00000
Bij = -13.2840 Bji = 48.7540
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

N2 ACETALD Aij = 0.00000 Aji = 0.00000
Bij = 120.581 Bji = 63.9471
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

N2 ACROL Aij = 0.00000 Aji = 0.00000
Bij = 124.408 Bji = -58.8482
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

N2 H2O Aij = 0.00000 Aji = 0.00000
Bij = -379.808 Bji = 252.116
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

N2 AC-ACET Aij = 0.00000 Aji = 0.00000
Bij = 94.4475 Bji = 66.8561

Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

N2 AC-ACRY Aij = 0.00000 Aji = 0.00000
Bij = 123.561 Bji = 63.9696
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

N2 HIDROQUI Aij = 0.00000 Aji = 0.00000
Bij = 125.687 Bji = 13.3144
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ARGON O2 Aij = 0.00000 Aji = 0.00000
Bij = 121.775 Bji = -144.008
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ARGON CO2 Aij = 0.00000 Aji = 0.00000
Bij = 27.9621 Bji = -67.9692
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ARGON PROPYLEN Aij = 0.00000 Aji = 0.00000
Bij = -141.719 Bji = 118.147
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ARGON ACETALD Aij = 0.00000 Aji = 0.00000
Bij = 179.668 Bji = -21.5675
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

ARGON ACROL Aij = 0.00000 Aji = 0.00000
Bij = -591.703 Bji = 338.142
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ARGON H2O Aij = 0.00000 Aji = 0.00000
Bij = 128.052 Bji = -179.622
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ARGON AC-ACET Aij = 0.00000 Aji = 0.00000
Bij = 153.296 Bji = -22.0354
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ARGON AC-ACRY Aij = 0.00000 Aji = 0.00000
Bij = 184.076 Bji = -33.3761
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ARGON HIDROQUI Aij = 0.00000 Aji = 0.00000
Bij = 203.062 Bji = -133.611
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

O2 CO2 Aij = 0.00000 Aji = 0.00000
Bij = -75.5178 Bji = -14.1831
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

O2 PROPYLEN Aij = 0.00000 Aji = 0.00000
Bij = -0.292861 Bji = 30.9368
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

O2 ACETALD Aij = 0.00000 Aji = 0.00000
Bij = 136.136 Bji = 47.0710
Cij = 0.00000 Cji = 0.00000

Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

O2 ACROL Aij = 0.00000 Aji = 0.00000
 Bij = 177.814 Bji = -156.464
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

O2 H2O Aij = 0.00000 Aji = 0.00000
 Bij = -376.688 Bji = 255.000
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

O2 AC-ACET Aij = 0.00000 Aji = 0.00000
 Bij = 109.447 Bji = 49.5399
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

O2 AC-ACRY Aij = 0.00000 Aji = 0.00000
 Bij = 138.894 Bji = 44.4632
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

O2 HIDROQUI Aij = 0.00000 Aji = 0.00000
 Bij = 147.604 Bji = -26.4608
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

CO2 PROPYLEN Aij = 0.00000 Aji = 0.00000
 Bij = -75.6950 Bji = 64.1436
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

CO2 ACETALD Aij = 0.00000 Aji = 0.00000
 Bij = 78.5602 Bji = 50.0051
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

CO2 ACROL Aij = 0.00000 Aji = 0.00000
Bij = 105.762 Bji = -74.1802
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

CO2 H2O Aij = 0.00000 Aji = 0.00000
Bij = -61.3623 Bji = -144.490
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

CO2 AC-ACET Aij = 0.00000 Aji = 0.00000
Bij = 50.8185 Bji = 52.5912
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

CO2 AC-ACRY Aij = 0.00000 Aji = 0.00000
Bij = 86.4947 Bji = 52.7063
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

CO2 HIDROQUI Aij = 0.00000 Aji = 0.00000
Bij = 88.6712 Bji = 66.5857
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

PROPYLEN ACETALD Aij = 0.00000 Aji = 0.00000
Bij = -304.736 Bji = 104.177
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

PROPYLEN ACROL Aij = 0.00000 Aji = 0.00000
Bij = -131.633 Bji = -42.4629
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

PROPYLEN H2O Aij = 0.00000 Aji = 0.00000
Bij = -423.800 Bji = -404.090
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

PROPYLEN AC-ACET Aij = 0.00000 Aji = 0.00000
Bij = -146.466 Bji = -151.671
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

PROPYLEN AC-ACRY Aij = 0.00000 Aji = 0.00000
Bij = -203.967 Bji = 17.2134
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

PROPYLEN HIDROQUI Aij = 0.00000 Aji = 0.00000
Bij = -261.042 Bji = -29.8416
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ACETALD ACROL Aij = 0.00000 Aji = 0.00000
Bij = -17.2761 Bji = 15.4505
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ACETALD H2O Aij = 11.9311 Aji = -4.09210
Bij = -4376.81 Bji = 1365.13
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 283.15 TO 348.15 K
SOURCE = INPUT

ACETALD AC-ACET Aij = 0.00000 Aji = 0.00000
Bij = -344.612 Bji = 169.502
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ACETALD AC-ACRY Aij = 0.00000 Aji = 0.00000
Bij = -701.721 Bji = 358.719
Cij = 0.00000 Cji = 0.00000

Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

ACETALD HIDROQUI Aij = 0.00000 Aji = 0.00000
Bij = 96.2162 Bji = 157.953
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ACROL H2O Aij = 0.00000 Aji = 0.00000
Bij = -536.810 Bji = 41.4812
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 291.50 TO 365.25 K
SOURCE = INPUT

ACROL AC-ACET Aij = 0.00000 Aji = 0.00000
Bij = -21.4175 Bji = -126.985
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ACROL AC-ACRY Aij = 0.00000 Aji = 0.00000
Bij = -298.060 Bji = 195.212
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

ACROL HIDROQUI Aij = 0.00000 Aji = 0.00000
Bij = -19.5242 Bji = 170.295
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

H2O AC-ACET Aij = 0.00000 Aji = 0.00000
Bij = -73.4440 Bji = 219.660
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 293.15 TO 313.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

H2O AC-ACRY Aij = 0.00000 Aji = 0.00000

Bij = -442.985 Bji = 249.716
Cij = 0.00000 Cji = 0.00000
Dij = 0.00000 Dji = 0.00000
Gij = 0.00000 Gji = 0.00000

T RANGE = 373.55 TO 393.65 K
SOURCE = INPUT

H2O HIDROQUI Aij = 0.00000 Aji = 0.00000
 Bij = -192.311 Bji = 352.498
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

AC-ACET AC-ACRY Aij = 0.00000 Aji = 0.00000
 Bij = -109.480 Bji = 60.9723
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

AC-ACET HIDROQUI Aij = 0.00000 Aji = 0.00000
 Bij = 91.0834 Bji = -266.071
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

AC-ACRY HIDROQUI Aij = 0.00000 Aji = 0.00000
 Bij = 197.604 Bji = -380.872
 Cij = 0.00000 Cji = 0.00000
 Dij = 0.00000 Dji = 0.00000
 Gij = 0.00000 Gji = 0.00000

T RANGE = 298.15 TO 298.15 K
SOURCE = INPUT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GROUP PARAMETERS

GROUP NUMBER: 3820

GMUFDQ DORTMUND-UNIFAC GROUP
 AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.930000

GMUFDR DORTMUND-UNIFAC GROUP
 VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.856000

GMUFLQ LYNGBY-UNIFAC GROUP
 AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.985000

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.934000

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.930000

SET: 2 SOURCE: DEFAULT

A = 0.930000

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.856000

SET: 2 SOURCE: DEFAULT

A = 0.856000

GROUP NUMBER: 3870

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.11600

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.17700

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.11600

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.17700

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.11600

SET: 2 SOURCE: DEFAULT

A = 1.11600

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.17700

SET: 2 SOURCE: DEFAULT

A = 1.17700

GROUP NUMBER: 3830

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.849000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.733000

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.955000

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.882000

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.849000

SET: 2 SOURCE: DEFAULT

A = 0.849000

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.733000

SET: 2 SOURCE: DEFAULT

A = 0.733000

GROUP NUMBER: 3850

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.982000

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.30000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.26100

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.29600

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.982000

SET: 2 SOURCE: DEFAULT

A = 0.982000

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.30000

SET: 2 SOURCE: DEFAULT

A = 1.30000

GROUP NUMBER: 1015

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.06080

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.632500

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.848000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.901100

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.848000

SET: 2 SOURCE: DEFAULT

A = 0.848000

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.901100

SET: 2 SOURCE: DEFAULT

A = 0.901100

GROUP NUMBER: 1070

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.60160

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.28320

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.17600

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.34540

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.17600

SET: 2 SOURCE: DEFAULT

A = 1.17600

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.34540

SET: 2 SOURCE: DEFAULT

A = 1.34540

GROUP NUMBER: 1450

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.771000

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.717300

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.948000

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.998000

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.948000

SET: 2 SOURCE: DEFAULT

A = 0.948000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.998000

SET: 2 SOURCE: DEFAULT

A = 0.998000

GROUP NUMBER: 1300

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 2.45610

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.73340

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.40000

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.920000

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.40000

SET: 2 SOURCE: DEFAULT

A = 1.40000

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.920000

SET: 2 SOURCE: DEFAULT

A = 0.920000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GROUP NUMBER: 1955

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.921500

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.800000

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.22400

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.30130

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.22400

SET: 2 SOURCE: DEFAULT

A = 1.22400

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.30130

SET: 2 SOURCE: DEFAULT

A = 1.30130

GROUP NUMBER: 1105

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.432100

GMUFRD DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.376300

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.400000

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.531300

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.400000

SET: 2 SOURCE: DEFAULT

A = 0.400000

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.531300

SET: 2 SOURCE: DEFAULT

A = 0.531300

GROUP NUMBER: 1350

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.975000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFDR DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.08000

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.680000

SET: 2 SOURCE: DEFAULT

A = 0.680000

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.895200

SET: 2 SOURCE: DEFAULT

A = 0.895200

GROUP NUMBER: 1100

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.211300

GMUFD R DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.376300

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.120000

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.365200

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.120000

SET: 2 SOURCE: DEFAULT

A = 0.120000

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.365200

SET: 2 SOURCE: DEFAULT

A = 0.365200

GROUP NUMBER: 1200

GMUFDQ DORTMUND-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 0.892700

GMUFD R DORTMUND-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.23020

GMUFLQ LYNGBY-UNIFAC GROUP
AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.20000

GMUFLR LYNGBY-UNIFAC GROUP
VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.00000

GMUFQ UNIFAC GROUP AREA PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.20000

SET: 2 SOURCE: DEFAULT

A = 1.20000

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

GMUFR UNIFAC GROUP VOLUME PARAMETER

SET: 1 SOURCE: DEFAULT

A = 1.00000

SET: 2 SOURCE: DEFAULT

A = 1.00000

GROUP BINARY PARAMETERS

GMUFB UNIFAC GROUP BINARY PARAMETER

$\text{LN}(\text{TAUIJ}) = -\text{BIJ}/T$

SET: 1

COMP I	COMP J	VALUE I-J	VALUE J-I
1015	1070 Bij = 86.0200 SOURCE = DEFAULT	Bji = -35.3600	
1015	1450 Bij = 677.000 SOURCE = DEFAULT	Bji = 505.700	
1015	1300 Bij = 1318.00 SOURCE = DEFAULT	Bji = 300.000	
1015	1955 Bij = 663.500 SOURCE = DEFAULT	Bji = 315.300	
1015	1105 Bij = 61.1300 SOURCE = DEFAULT	Bji = -11.1200	
1015	1350 Bij = 1333.00 SOURCE = DEFAULT	Bji = 275.800	
1015	1100 Bij = 61.1300 SOURCE = DEFAULT	Bji = -11.1200	
1015	1200 Bij = 986.500 SOURCE = DEFAULT	Bji = 156.400	
1070	1450 Bij = 448.800 SOURCE = DEFAULT	Bji = 56.3000	
1070	1300 Bij = 270.600 SOURCE = DEFAULT	Bji = 496.100	

PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1070 1105 Bij = 38.8100 Bji = 3.44600
 SOURCE = DEFAULT

1070 1350 Bij = 526.100 Bji = 217.500
 SOURCE = DEFAULT

1070 1100 Bij = 38.8100 Bji = 3.44600
 SOURCE = DEFAULT

1070 1200 Bij = 524.100 Bji = 457.000
 SOURCE = DEFAULT

1450 1300 Bij = 480.800 Bji = -116.000
 SOURCE = DEFAULT

1450 1955 Bij = 497.500 Bji = -165.500
 SOURCE = DEFAULT

1450 1105 Bij = 23.3900 Bji = 347.300
 SOURCE = DEFAULT

1450 1350 Bij = -155.600 Bji = -271.100
 SOURCE = DEFAULT

1450 1100 Bij = 23.3900 Bji = 347.300
 SOURCE = DEFAULT

1450 1200 Bij = 529.000 Bji = -203.600
 SOURCE = DEFAULT

1300 1955 Bij = -14.0900 Bji = -66.1700
 SOURCE = DEFAULT

1300 1105 Bij = 362.300 Bji = 903.800
 SOURCE = DEFAULT

1300 1350 Bij = 324.500 Bji = -601.800
 SOURCE = DEFAULT

1300 1100 Bij = 362.300 Bji = 903.800
 SOURCE = DEFAULT

1300 1200 Bij = -229.100 Bji = 353.500
 SOURCE = DEFAULT

1955 1105 Bij = 62.3200 Bji = 537.400
 SOURCE = DEFAULT

1955 1350 Bij = -11.0000 Bji = 408.900
 SOURCE = DEFAULT

1955 1100 Bij = 62.3200 Bji = 537.400
 SOURCE = DEFAULT

PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1955 1200 Bij = -151.000 Bji = 199.000
 SOURCE = DEFAULT

1105 1350 Bij = 1329.00 Bji = 25.3400

SOURCE = DEFAULT

1105 1200 Bij = 636.100 Bji = 89.6000
SOURCE = DEFAULT

1350 1100 Bij = 25.3400 Bji = 1329.00
SOURCE = DEFAULT

1350 1200 Bij = -451.600 Bji = -259.700
SOURCE = DEFAULT

1100 1200 Bij = 636.100 Bji = 89.6000
SOURCE = DEFAULT

SET: 2

COMP I	COMP J	VALUE I-J	VALUE J-I
--------	--------	-----------	-----------

1015	1070 Bij = 74.5400 SOURCE = DEFAULT	Bji = 292.300	
------	--	---------------	--

1015	1450 Bij = 158.100 SOURCE = DEFAULT	Bji = 146.100	
------	--	---------------	--

1015	1300 Bij = 1300.00 SOURCE = DEFAULT	Bji = 342.400	
------	--	---------------	--

1015	1955 Bij = 139.400 SOURCE = DEFAULT	Bji = 1744.00	
------	--	---------------	--

1015	1105 Bij = -114.800 SOURCE = DEFAULT	Bji = 156.500	
------	---	---------------	--

1015	1350 Bij = 2255.00 SOURCE = DEFAULT	Bji = -159.800	
------	--	----------------	--

1015	1100 Bij = -114.800 SOURCE = DEFAULT	Bji = 156.500	
------	---	---------------	--

1015	1200 Bij = 644.600 SOURCE = DEFAULT	Bji = 328.200	
------	--	---------------	--

1070	1450 Bij = -214.700 SOURCE = DEFAULT	Bji = 517.000	
------	---	---------------	--

1070	1300 Bij = 896.000 SOURCE = DEFAULT	Bji = 220.600	
------	--	---------------	--

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1070	1955 Bij = 1647.00 SOURCE = DEFAULT	Bji = -48.5200	
------	--	----------------	--

1070	1105 Bij = 38.8100 SOURCE = DEFAULT	Bji = 3.44600	
------	--	---------------	--

1070	1100 Bij = 38.8100 SOURCE = DEFAULT	Bji = 3.44600	
------	--	---------------	--

1070	1200 Bij = 724.400 SOURCE = DEFAULT	Bji = 470.700	
------	--	---------------	--

1450	1300 Bij = 623.700 SOURCE = DEFAULT	Bji = -349.900	
------	--	----------------	--

1450	1955 Bij = 0.750000 SOURCE = DEFAULT	Bji = 1051.00	
------	---	---------------	--

1450	1105	Bij = -75.3000	Bji = 362.300
		SOURCE = DEFAULT	
1450	1100	Bij = -75.3000	Bji = 362.300
		SOURCE = DEFAULT	
1450	1200	Bij = -431.300	Bji = 1409.00
		SOURCE = DEFAULT	
1300	1955	Bij = -465.700	Bji = 652.300
		SOURCE = DEFAULT	
1300	1105	Bij = 372.800	Bji = 859.400
		SOURCE = DEFAULT	
1300	1350	Bij = 344.500	Bji = -595.900
		SOURCE = DEFAULT	
1300	1100	Bij = 372.800	Bji = 859.400
		SOURCE = DEFAULT	
1300	1200	Bij = -122.400	Bji = 28.7300
		SOURCE = DEFAULT	
1955	1105	Bij = 75.4900	Bji = 461.800
		SOURCE = DEFAULT	
1955	1100	Bij = 75.4900	Bji = 461.800
		SOURCE = DEFAULT	
1955	1200	Bij = 118.400	Bji = -104.000
		SOURCE = DEFAULT	
1105	1350	Bij = 1649.00	Bji = -473.200
		SOURCE = DEFAULT	

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1105	1200	Bij = 703.900	Bji = -9.21000
		SOURCE = DEFAULT	
1350	1100	Bij = -473.200	Bji = 1649.00
		SOURCE = DEFAULT	
1350	1200	Bij = -63.1500	Bji = -195.500
		SOURCE = DEFAULT	
1100	1200	Bij = 703.900	Bji = -9.21000
		SOURCE = DEFAULT	

UNIFDM DORTMUND-UNIFAC GROUP BINARY PARAMETERS

$$AMN = A + BT + CT^2$$

UNITS: K

SET: 1

COMP I	COMP J	VALUE I-J	VALUE J-I
1015	1070	Aij = 189.660	Aji = -95.4180
		Bij = -0.272320	Bji = 0.617080E-01
		Cij = 0.00000	Cji = 0.00000
		SOURCE = DEFAULT	
1015	1450	Aij = 875.850	Aji = 256.210
		Bij = 0.00000	Bji = 0.00000

Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1015 1300 Aij = 1391.30 Aji = -17.2530
Bij = -3.61560 Bji = 0.838900
Cij = 0.114400E-02 Cji = 0.902100E-03
SOURCE = DEFAULT

1015 1955 Aij = 1182.20 Aji = 2017.70
Bij = -3.26470 Bji = -9.09330
Cij = 0.919800E-02 Cji = 0.102380E-01
SOURCE = DEFAULT

1015 1105 Aij = 114.200 Aji = 16.0700
Bij = 0.933000E-01 Bji = -0.299800
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1015 1350 Aij = 1381.00 Aji = 1987.00
Bij = -0.997700 Bji = -4.61500
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1015 1100 Aij = 114.200 Aji = 16.0700
Bij = 0.933000E-01 Bji = -0.299800
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1015 1200 Aij = 2777.00 Aji = 1606.00
Bij = -4.67400 Bji = -4.74600
Cij = 0.155100E-02 Cji = 0.918100E-03
SOURCE = DEFAULT

1070 1450 Aij = 476.250 Aji = 202.490
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1070 1300 Aij = 778.300 Aji = -1301.00
Bij = 0.148200 Bji = 4.07200
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1070 1955 Aij = -2026.10 Aji = -347.500
Bij = 8.15490 Bji = 1.21600
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1070 1105 Aij = 174.100 Aji = -157.200
Bij = -0.588600 Bji = 0.616600
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1070 1350 Aij = 1207.00 Aji = 191.600
Bij = -1.95500 Bji = 0.493600
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1070 1100 Aij = 174.100 Aji = -157.200
Bij = -0.588600 Bji = 0.616600
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1070 1200 Aij = 2649.00 Aji = 1566.00
Bij = -6.50800 Bji = -5.80900
Cij = 0.482200E-02 Cji = 0.519700E-02

SOURCE = DEFAULT

1450 1300 Aij = 512.600 Aji = -1545.00
Bij = -2.14500 Bji = 6.51200
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1450 1955 Aij = 435.640 Aji = -188.000
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1450 1105 Aij = 1011.00 Aji = -365.500
Bij = -2.16700 Bji = 1.87400
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1450 1350 Aij = -410.210 Aji = 5.60400
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1450 1100 Aij = 1011.00 Aji = -365.500
Bij = -2.16700 Bji = 1.87400
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1450 1200 Aij = 1590.00 Aji = -281.400
Bij = -24.5700 Bji = 2.37900
Cij = 0.621200E-01 Cji = -0.666800E-02
SOURCE = DEFAULT

1300 1955 Aij = -1795.20 Aji = 624.970
Bij = 12.7080 Bji = -4.68780
Cij = -0.154550E-01 Cji = 0.523710E-02
SOURCE = DEFAULT

1300 1105 Aij = 332.300 Aji = 792.000
Bij = 1.15800 Bji = -1.72600
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1300 1350 Aij = -2686.00 Aji = 148.400
Bij = 19.4400 Bji = -2.75700
Cij = -0.270200E-01 Cji = 0.232900E-02
SOURCE = DEFAULT

1300 1100 Aij = 332.300 Aji = 792.000
Bij = 1.15800 Bji = -1.72600
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1300 1200 Aij = 1460.00 Aji = -801.900
Bij = -8.67300 Bji = 3.82400
Cij = 0.164100E-01 Cji = -0.751400E-02
SOURCE = DEFAULT

1955 1105 Aij = 613.320 Aji = 69.5610
Bij = -1.59500 Bji = 1.88810
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1955 1350 Aij = 281.080 Aji = 401.880
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

```

1955 1100 Aij = 613.320  Aji = 69.5610
      Bij = -1.59500  Bji = 1.88810
      Cij = 0.00000  Cji = 0.00000
      SOURCE = DEFAULT

1955 1200 Aij = 1525.80  Aji = -1295.00
      Bij = -4.91550  Bji = 4.36340
      Cij = 0.00000  Cji = 0.00000
      SOURCE = DEFAULT

1105 1350 Aij = 1356.00  Aji = 2340.00
      Bij = -2.11800  Bji = -5.04300
      Cij = 0.00000  Cji = 0.00000
      SOURCE = DEFAULT

1105 1200 Aij = 3972.00  Aji = 3049.00
      Bij = -13.1600  Bji = -12.7700
      Cij = 0.120800E-01  Cji = 0.143500E-01
      SOURCE = DEFAULT

1350 1100 Aij = 2340.00  Aji = 1356.00
      Bij = -5.04300  Bji = -2.11800
      Cij = 0.00000  Cji = 0.00000
      SOURCE = DEFAULT

1350 1200 Aij = 465.400  Aji = 83.9100
      Bij = -1.84100  Bji = -1.26200
      Cij = 0.00000  Cji = 0.00000
      SOURCE = DEFAULT

1100 1200 Aij = 3972.00  Aji = 3049.00
      Bij = -13.1600  Bji = -12.7700
      Cij = 0.120800E-01  Cji = 0.143500E-01
      SOURCE = DEFAULT

```

PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

UNIFLB LYNGBY-UNIFAC GROUP
BINARY PARAMETERS

$$AMN = A + B (T-T_0) + C(T \ln(T_0/T) + (T-T_0))$$

UNITS: C

SET: 1

COMP I	COMP J	VALUE I-J	VALUE J-I
1015	1070	Aij = 76.4600 Bij = -0.183400 Cij = -0.365900 SOURCE = DEFAULT	Aji = -46.4500 Bji = -0.181700 Cji = -0.488800
1015	1450	Aij = 721.500 Bij = -1.47000 Cij = 0.00000 SOURCE = DEFAULT	Aji = 313.500 Bji = -4.06400 Cji = 0.00000
1015	1300	Aij = 1857.00 Bij = -3.32200 Cij = -9.00000 SOURCE = DEFAULT	Aji = 410.700 Bji = 2.86800 Cji = 9.00000

1015 1955 Aij = 664.100 Aji = 171.500
Bij = 1.31700 Bji = -1.46300
Cij = -4.90400 Cji = 0.675900
SOURCE = DEFAULT

1015 1105 Aij = 62.8800 Aji = -1.44700
Bij = -0.249300 Bji = 0.563800E-01
Cij = 1.10300 Cji = -1.61200
SOURCE = DEFAULT

1015 1100 Aij = 62.8800 Aji = -1.44700
Bij = -0.249300 Bji = 0.563800E-01
Cij = 1.10300 Cji = -1.61200
SOURCE = DEFAULT

1015 1200 Aij = 972.800 Aji = 637.500
Bij = 0.268700 Bji = -5.83200
Cij = 8.77300 Cji = -0.870300
SOURCE = DEFAULT

1070 1450 Aij = 320.400 Aji = 161.800
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1070 1300 Aij = 1049.00 Aji = 564.400
Bij = -3.30500 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1070 1955 Aij = 186.000 Aji = 227.300
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1070 1105 Aij = 35.0700 Aji = -0.277200E-01
Bij = -0.804200E-01 Bji = -0.712900E-01
Cij = -0.376100 Cji = -0.340700
SOURCE = DEFAULT

1070 1100 Aij = 35.0700 Aji = -0.277200E-01
Bij = -0.804200E-01 Bji = -0.712900E-01
Cij = -0.376100 Cji = -0.340700
SOURCE = DEFAULT

1070 1200 Aij = 633.500 Aji = 794.700
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1450 1105 Aij = 125.400 Aji = 215.100
Bij = -3.13300 Bji = 1.93600
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1450 1100 Aij = 125.400 Aji = 215.100
Bij = -3.13300 Bji = 1.93600
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1450 1200 Aij = 2553.00 Aji = -325.200

Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1300 1955 Aij = 8.62100 Aji = 86.4400
Bij = -1.70900 Bji = 0.994100
Cij = 6.41300 Cji = -12.7400
SOURCE = DEFAULT

1300 1105 Aij = 736.700 Aji = 1055.00
Bij = 1.96500 Bji = -2.96800
Cij = 0.00000 Cji = 9.85400
SOURCE = DEFAULT

1300 1100 Aij = 736.700 Aji = 1055.00
Bij = 1.96500 Bji = -2.96800
Cij = 0.00000 Cji = 9.85400
SOURCE = DEFAULT

1300 1200 Aij = -47.1500 Aji = 155.600
Bij = -0.494700 Bji = 0.376100
Cij = 8.65000 Cji = -9.00000
SOURCE = DEFAULT

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PHYSICAL PROPERTIES SECTION

PROPERTY PARAMETERS (CONTINUED)

1955 1105 Aij = 62.3200 Aji = 537.400
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1955 1100 Aij = 62.3200 Aji = 537.400
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1955 1200 Aij = -92.2100 Aji = 61.7800
Bij = 0.00000 Bji = 0.00000
Cij = 0.00000 Cji = 0.00000
SOURCE = DEFAULT

1105 1200 Aij = 712.600 Aji = 587.300
Bij = -1.45900 Bji = -0.678700
Cij = 9.00000 Cji = 9.00000
SOURCE = DEFAULT

1100 1200 Aij = 712.600 Aji = 587.300
Bij = -1.45900 Bji = -0.678700
Cij = 9.00000 Cji = 9.00000
SOURCE = DEFAULT

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS

FOR COMPONENT PAIRS CONTAINING N2

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-------------	-------------------	--------------------	-------------------------

UNQUAC PARAMETERS

UNIFAC

N2 ARGON UNIQ /2 22.94
ARGON N2 UNIQ /2 -18.47

N2 O2 UNIQ /2 32.60
O2 N2 UNIQ /2 -37.89

N2 CO2 UNIQ /2 -69.04
CO2 N2 UNIQ /2 3.251

N2 PROPYLEN UNIQ /2 -13.28
PROPYLEN N2 UNIQ /2 48.75

N2 ACETALD UNIQ /2 120.6
ACETALD N2 UNIQ /2 63.95

N2 ACROL UNIQ /2 124.4
ACROL N2 UNIQ /2 -58.85

N2 H2O UNIQ /2 -379.8
H2O N2 UNIQ /2 252.1

N2 AC-ACET UNIQ /2 94.45
AC-ACET N2 UNIQ /2 66.86

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

N2 AC-ACRY UNIQ /2 123.6
AC-ACRY N2 UNIQ /2 63.97

N2 HIDROQUI UNIQ /2 125.7
HIDROQUI N2 UNIQ /2 13.31

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING ARGON

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-------------	----------------	-----------------	----------------------

UNQUAC PARAMETERS UNIFAC

ARGON O2 UNIQ /2 121.8
O2 ARGON UNIQ /2 -144.0

ARGON CO2 UNIQ /2 27.97
CO2 ARGON UNIQ /2 -67.98

ARGON PROPYLEN UNIQ /2 -141.7
PROPYLEN ARGON UNIQ /2 118.1

ARGON ACETALD UNIQ /2 179.7
ACETALD ARGON UNIQ /2 -21.56

ARGON ACROL UNIQ /2 -591.7
ACROL ARGON UNIQ /2 338.1

ARGON H2O UNIQ /2 128.1
H2O ARGON UNIQ /2 -179.6

ARGON AC-ACET UNIQ /2 153.3

AC-ACET ARGON UNIQ /2 -22.04

ARGON AC-ACRY UNIQ /2 184.1
AC-ACRY ARGON UNIQ /2 -33.38

ARGON HIDROQUI UNIQ /2 203.1
HIDROQUI ARGON UNIQ /2 -133.6

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING O2

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-------------	----------------	-----------------	----------------------

UNQUAC PARAMETERS

UNIFAC

O2 CO2 UNIQ /2 -75.52
CO2 O2 UNIQ /2 -14.18

O2 PROPYLEN UNIQ /2 -0.2954
PROPYLEN O2 UNIQ /2 30.94

O2 ACETALD UNIQ /2 136.1
ACETALD O2 UNIQ /2 47.07

O2 ACROL UNIQ /2 177.8
ACROL O2 UNIQ /2 -156.5

O2 H2O UNIQ /2 -376.7
H2O O2 UNIQ /2 255.0

O2 AC-ACET UNIQ /2 109.4
AC-ACET O2 UNIQ /2 49.54

O2 AC-ACRY UNIQ /2 138.9
AC-ACRY O2 UNIQ /2 44.46

O2 HIDROQUI UNIQ /2 147.6
HIDROQUI O2 UNIQ /2 -26.46

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING CO2

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-------------	----------------	-----------------	----------------------

UNQUAC PARAMETERS

UNIFAC

CO2 PROPYLEN UNIQ /2 -18.98
PROPYLEN CO2 UNIQ /2 14.64

CO2 ACETALD UNIQ /2 78.56
ACETALD CO2 UNIQ /2 50.01

CO2 ACROL UNIQ /2 105.8
ACROL CO2 UNIQ /2 -74.18

CO2 H2O UNIQ /2 -61.36
H2O CO2 UNIQ /2 -144.5

CO2 AC-ACET UNIQ /2 50.82
AC-ACET CO2 UNIQ /2 52.59

CO2 AC-ACRY UNIQ /2 86.49
AC-ACRY CO2 UNIQ /2 52.71

CO2 HIDROQUI UNIQ /2 88.67
HIDROQUI CO2 UNIQ /2 66.59

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING PROPYLEN

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-----	-----	-----	-----

UNQUAC PARAMETERS UNIFAC

PROPYLEN ACETALD UNIQ /2 -304.7
ACETALD PROPYLEN UNIQ /2 104.2

PROPYLEN ACROL UNIQ /2 -131.6
ACROL PROPYLEN UNIQ /2 -42.46

PROPYLEN H2O UNIQ /2 -423.8
H2O PROPYLEN UNIQ /2 -404.1

PROPYLEN AC-ACET UNIQ /2 -146.5
AC-ACET PROPYLEN UNIQ /2 -151.7

PROPYLEN AC-ACRY UNIQ /2 -204.0
AC-ACRY PROPYLEN UNIQ /2 17.21

PROPYLEN HIDROQUI UNIQ /2 -261.0
HIDROQUI PROPYLEN UNIQ /2 -29.84

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING ACETALD

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-----	-----	-----	-----

UNQUAC PARAMETERS UNIFAC

ACETALD ACROL UNIQ /2 69.91
ACROL ACETALD UNIQ /2 -80.30

ACETALD H2O UNIQ /2 -544.8

H20 ACETALD UNIQ /2 77.41

ACETALD AC-ACET UNIQ /2 -344.6
AC-ACET ACETALD UNIQ /2 169.5

ACETALD AC-ACRY UNIQ /2 -701.7
AC-ACRY ACETALD UNIQ /2 358.7

ACETALD HIDROQUI UNIQ /2 96.22
HIDROQUI ACETALD UNIQ /2 158.0

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING ACROL

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-------------	-------------------	--------------------	-------------------------

UNIQUAC PARAMETERS UNIFAC

ACROL H20 UNIQ /2 -176.1
H20 ACROL UNIQ /2 -124.7

ACROL AC-ACET UNIQ /2 -21.42
AC-ACET ACROL UNIQ /2 -127.0

ACROL AC-ACRY UNIQ /2 -298.1
AC-ACRY ACROL UNIQ /2 195.2

ACROL HIDROQUI UNIQ /2 -19.52
HIDROQUI ACROL UNIQ /2 170.3

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING H2O

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-------------	-------------------	--------------------	-------------------------

UNIQUAC PARAMETERS UNIFAC

H2O AC-ACET UNIQ /2 -212.4
AC-ACET H2O UNIQ /2 126.9

H2O AC-ACRY UNIQ /2 -260.6
AC-ACRY H2O UNIQ /2 112.3

H2O HIDROQUI UNIQ /2 -192.3
HIDROQUI H2O UNIQ /2 352.5

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING AC-ACET

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-------------	----------------	-----------------	----------------------

UNIQUAC PARAMETERS			UNIFAC
AC-ACET	AC-ACRY	UNIQ /2	-109.5
AC-ACRY	AC-ACET	UNIQ /2	60.97
AC-ACET	HIDROQUI	UNIQ /2	91.08
HIDROQUI	AC-ACET	UNIQ /2	-266.1

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PROPERTY CONSTANT ESTIMATION SECTION

BINARY PARAMETERS (CONTINUED)

FOR COMPONENT PAIRS CONTAINING AC-ACRY

DESCRIPTION	PARAMETER NAME	ESTIMATED VALUE	METHOD OF ESTIMATION
-------------	----------------	-----------------	----------------------

UNIQUAC PARAMETERS			UNIFAC
AC-ACRY	HIDROQUI	UNIQ /2	197.6
HIDROQUI	AC-ACRY	UNIQ /2	-380.9

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REACTION SECTION

REACTION: R-1 TYPE: GENERAL

Unit operations referencing this reaction model:

Reactor Name: R-101 Block Type: RPLUG
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U-O-S BLOCK SECTION

BLOCK: B6 MODEL: HEATER

INLET STREAM: 10
OUTLET STREAM: 11
PROPERTY OPTION SET: UNIQ-RK UNIQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	2159.29	2159.29	0.00000
MASS(KG/HR)	53977.6	53977.6	-0.269592E-15
ENTHALPY(KW)	-79395.9	-79395.9	-0.366745E-08

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	2218.92	KG/HR
PRODUCT STREAMS CO2E	2218.92	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	0.00000	KG/HR
TOTAL CO2E PRODUCTION	0.00000	KG/HR

*** INPUT DATA ***

TWO PHASE TP FLASH
 SPECIFIED TEMPERATURE C 105.000
 SPECIFIED PRESSURE KPA 180.000
 MAXIMUM NO. ITERATIONS 30
 CONVERGENCE TOLERANCE 0.000100000

*** RESULTS ***

OUTLET TEMPERATURE C 105.00
 OUTLET PRESSURE KPA 180.00
 HEAT DUTY KW 0.29118E-03
 OUTLET VAPOR FRACTION 1.0000

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U-O-S BLOCK SECTION

BLOCK: B6 MODEL: HEATER (CONTINUED)

V-L PHASE EQUILIBRIUM :

COMP	F(I)	X(I)	Y(I)	K(I)
N2	0.39888	0.96174E-05	0.39888	55215.
ARGON	0.52818E-02	0.19707E-06	0.52818E-02	35681.
O2	0.24007E-01	0.92821E-06	0.24007E-01	34432.
CO2	0.23350E-01	0.11305E-04	0.23350E-01	2749.8
PROPYLEN	0.50678E-02	0.51972E-06	0.50678E-02	12981.
FORMA-01	0.23026E-02	0.12169E-03	0.23026E-02	25.191
ACETALD	0.86348E-03	0.83598E-04	0.86348E-03	13.751
ACROL	0.36806E-01	0.13065E-02	0.36806E-01	37.504
H2O	0.49640	0.98122	0.49640	0.67350
AC-ACET	0.14391E-02	0.73824E-02	0.14391E-02	0.25952
AC-ACRY	0.56054E-02	0.98585E-02	0.56054E-02	0.75695

BLOCK: C-101 MODEL: COMPR

 INLET STREAM: 3
 OUTLET STREAM: 6
 PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	1109.31	1109.31	0.00000
MASS(KG/HR)	32085.0	32085.0	0.00000
ENTHALPY(KW)	-337.118	329.145	-1.97635

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.00000	KG/HR
PRODUCT STREAMS CO2E	0.00000	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	231.129	KG/HR
TOTAL CO2E PRODUCTION	231.129	KG/HR

*** INPUT DATA ***

ISENTROPIC CENTRIFUGAL COMPRESSOR
 OUTLET PRESSURE KPA 180.000
 ISENTROPIC EFFICIENCY 0.72000
 MECHANICAL EFFICIENCY 1.00000
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U-O-S BLOCK SECTION

BLOCK: C-101 MODEL: COMPR (CONTINUED)

*** RESULTS ***

INDICATED HORSEPOWER REQUIREMENT KW	666.263
BRAKE HORSEPOWER REQUIREMENT KW	666.263
NET WORK REQUIRED KW	666.263
POWER LOSSES KW	0.0
ISENTROPIC HORSEPOWER REQUIREMENT KW	479.710
CALCULATED OUTLET TEMP C	99.1273
ISENTROPIC TEMPERATURE C	78.4584
EFFICIENCY (POLYTR/ISENTR) USED	0.72000
OUTLET VAPOR FRACTION	1.00000
HEAD DEVELOPED, METER	5,488.56
MECHANICAL EFFICIENCY USED	1.00000
INLET HEAT CAPACITY RATIO	1.40211
INLET VOLUMETRIC FLOW RATE , CUM/HR	27,213.1
OUTLET VOLUMETRIC FLOW RATE, CUM/HR	19,073.9
INLET COMPRESSIBILITY FACTOR	0.99950
OUTLET COMPRESSIBILITY FACTOR	0.99992
AV. ISENT. VOL. EXPONENT	1.40029
AV. ISENT. TEMP EXPONENT	1.39941
AV. ACTUAL VOL. EXPONENT	1.62597
AV. ACTUAL TEMP EXPONENT	1.62408

*** ASSOCIATED UTILITIES ***

UTILITY ID FOR ELECTRICITY	ELECTRIC
RATE OF CONSUMPTION	666.2634 KW
COST	51.6354 \$/HR
CO2 EQUIVALENT EMISSIONS	231.1288 KG/HR

BLOCK: E-101 MODEL: HEATER

 INLET STREAM: 1
 OUTLET STREAM: 4
 PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	124.300	124.300	0.00000
MASS(KG/HR)	5230.62	5230.62	0.00000
ENTHALPY(KW)	1158.40	1540.70	-0.248129

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U-O-S BLOCK SECTION

BLOCK: E-101 MODEL: HEATER (CONTINUED)

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.00000	KG/HR
PRODUCT STREAMS CO2E	0.00000	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	90.4925	KG/HR
TOTAL CO2E PRODUCTION	90.4925	KG/HR

*** INPUT DATA ***

TWO PHASE TP FLASH	
SPECIFIED TEMPERATURE	C 310.000
PRESSURE DROP	KPA 0.0
MAXIMUM NO. ITERATIONS	30
CONVERGENCE TOLERANCE	0.000100000

*** RESULTS ***

OUTLET TEMPERATURE	C 310.00
OUTLET PRESSURE	KPA 180.00
HEAT DUTY	KW 382.29
OUTLET VAPOR FRACTION	1.0000

V-L PHASE EQUILIBRIUM :

COMP	F(I)	X(I)	Y(I)	K(I)
PROPYLEN	1.0000	1.0000	1.0000	37.524

*** ASSOCIATED UTILITIES ***

UTILITY ID FOR GENERAL	FIRE-HEA
RATE OF CONSUMPTION	2293.7525 KG/HR
COST	5.8491 \$/HR
CO2 EQUIVALENT EMISSIONS	90.4925 KG/HR

BLOCK: E-102 MODEL: HEATER

 INLET STREAM: 2
 OUTLET STREAM: 5
 PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	924.880	924.880	0.00000
MASS(KG/HR)	16662.0	16662.0	0.00000
ENTHALPY(KW)	-61333.2	-59598.3	-0.282865E-01

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U-O-S BLOCK SECTION

BLOCK: E-102 MODEL: HEATER (CONTINUED)

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.00000	KG/HR
PRODUCT STREAMS CO2E	0.00000	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	410.669	KG/HR
TOTAL CO2E PRODUCTION	410.669	KG/HR

*** INPUT DATA ***

TWO PHASE TP FLASH		
SPECIFIED TEMPERATURE	C	310.000
PRESSURE DROP	KPA	0.0
MAXIMUM NO. ITERATIONS		30
CONVERGENCE TOLERANCE		0.000100000

*** RESULTS ***

OUTLET TEMPERATURE	C	310.00
OUTLET PRESSURE	KPA	180.00
HEAT DUTY	KW	1734.9
OUTLET VAPOR FRACTION		1.0000

V-L PHASE EQUILIBRIUM :

COMP	F(I)	X(I)	Y(I)	K(I)
H2O	1.0000	1.0000	1.0000	41.737

*** ASSOCIATED UTILITIES ***

UTILITY ID FOR GENERAL	FIRE-HEA
RATE OF CONSUMPTION	1.0409+04 KG/HR
COST	26.5440 \$/HR
CO2 EQUIVALENT EMISSIONS	410.6686 KG/HR

BLOCK: E-103 MODEL: HEATER

 INLET STREAM: 6

OUTLET STREAM: 7
PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	1109.31	1109.31	0.00000
MASS(KG/HR)	32085.0	32085.0	0.00000
ENTHALPY(KW)	329.145	2263.50	-0.854586

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U-O-S BLOCK SECTION

BLOCK: E-103 MODEL: HEATER (CONTINUED)

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.00000	KG/HR
PRODUCT STREAMS CO2E	0.00000	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	457.882	KG/HR
TOTAL CO2E PRODUCTION	457.882	KG/HR

*** INPUT DATA ***

TWO PHASE TP FLASH
SPECIFIED TEMPERATURE C 310.000
PRESSURE DROP KPA 0.0
MAXIMUM NO. ITERATIONS 30
CONVERGENCE TOLERANCE 0.000100000

*** RESULTS ***

OUTLET TEMPERATURE C	310.00
OUTLET PRESSURE KPA	180.00
HEAT DUTY KW	1934.4
OUTLET VAPOR FRACTION	1.0000

V-L PHASE EQUILIBRIUM :

COMP	F(I)	X(I)	Y(I)	K(I)
N2	0.77643	0.11540	0.77643	53611.
ARGON	0.10281E-01	0.11747E-02	0.10281E-01	69737.
O2	0.20880	0.31156E-01	0.20880	53398.
H2O	0.44954E-02	0.85227	0.44954E-02	42.027

*** ASSOCIATED UTILITIES ***

UTILITY ID FOR GENERAL	FIRE-HEA
RATE OF CONSUMPTION	1.1606+04 KG/HR
COST	29.5956 \$/HR
CO2 EQUIVALENT EMISSIONS	457.8818 KG/HR

BLOCK: E-104 MODEL: HEATX

HOT SIDE:

INLET STREAM: 9
OUTLET STREAM: 10
PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1
COLD SIDE:

INLET STREAM: 15
OUTLET STREAM: 16
PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1
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U-O-S BLOCK SECTION

BLOCK: E-104 MODEL: HEATX (CONTINUED)

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	24580.7	24580.7	0.00000
MASS(KG/HR)	461832.	461832.	0.126036E-15
ENTHALPY(KW)	-0.182668E+07	-0.182668E+07	-0.764768E-15

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	2236.51	KG/HR
PRODUCT STREAMS CO2E	2236.51	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	0.00000	KG/HR
TOTAL CO2E PRODUCTION	0.00000	KG/HR

*** INPUT DATA ***

FLASH SPECS FOR HOT SIDE:

TWO PHASE FLASH	
MAXIMUM NO. ITERATIONS	30
CONVERGENCE TOLERANCE	0.000100000

FLASH SPECS FOR COLD SIDE:

TWO PHASE FLASH	
MAXIMUM NO. ITERATIONS	30
CONVERGENCE TOLERANCE	0.000100000

FLOW DIRECTION AND SPECIFICATION:

COUNTERCURRENT HEAT EXCHANGER	
SPECIFIED EXCHANGER DUTY	
SPECIFIED VALUE KW	4448.6800
LMTD CORRECTION FACTOR	1.00000

PRESSURE SPECIFICATION:

HOT SIDE PRESSURE DROP	KPA	0.0000
COLD SIDE PRESSURE DROP	KPA	0.0000

HEAT TRANSFER COEFFICIENT SPECIFICATION:

HOT LIQUID COLD LIQUID	KCAL/HR-SQM-K	730.8684
HOT 2-PHASE COLD LIQUID	KCAL/HR-SQM-K	730.8684
HOT VAPOR COLD LIQUID	KCAL/HR-SQM-K	730.8684
HOT LIQUID COLD 2-PHASE	KCAL/HR-SQM-K	730.8684
HOT 2-PHASE COLD 2-PHASE	KCAL/HR-SQM-K	730.8684
HOT VAPOR COLD 2-PHASE	KCAL/HR-SQM-K	730.8684
HOT LIQUID COLD VAPOR	KCAL/HR-SQM-K	730.8684
HOT 2-PHASE COLD VAPOR	KCAL/HR-SQM-K	730.8684
HOT VAPOR COLD VAPOR	KCAL/HR-SQM-K	730.8684
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U-O-S BLOCK SECTION

BLOCK: E-104 MODEL: HEATX (CONTINUED)

*** OVERALL RESULTS ***

STREAMS:

9	----->	HOT	-----> 10
T= 3.1000D+02			T= 1.0500D+02
P= 1.8000D+02			P= 1.8000D+02
V= 1.0000D+00			V= 1.0000D+00
16	<-----	COLD	<----- 15
T= 8.5910D+01			T= 7.6835D+01
P= 1.8000D+02			P= 1.8000D+02
V= 6.3649D-06			V= 1.8295D-06

DUTY AND AREA:
CALCULATED HEAT DUTY KW 4448.6800
CALCULATED (REQUIRED) AREA SQM 55.4019
ACTUAL EXCHANGER AREA SQM 55.4019
PER CENT OVER-DESIGN 0.0000

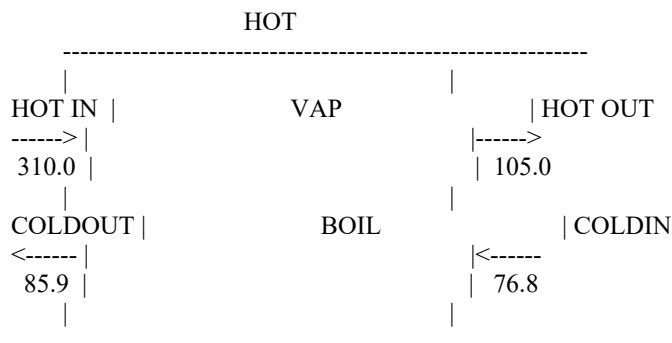
HEAT TRANSFER COEFFICIENT:
AVERAGE COEFFICIENT (DIRTY) KCAL/HR-SQM-K 730.8684
UA (DIRTY) CAL/SEC-K 11247.6342

LOG-MEAN TEMPERATURE DIFFERENCE:
LMTD CORRECTION FACTOR 1.0000
LMTD (CORRECTED) C 94.4687
NUMBER OF SHELLS IN SERIES 1

PRESSURE DROP:
HOTSIDE, TOTAL KPA 0.0000
COLD SIDE, TOTAL KPA 0.0000

*** ZONE RESULTS ***

TEMPERATURE LEAVING EACH ZONE:



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U-O-S BLOCK SECTION

BLOCK: E-104 MODEL: HEATX (CONTINUED)

ZONE HEAT TRANSFER AND AREA:

ZONE	HEAT DUTY KW	AREA SQM	LMTD C	AVERAGE U KCAL/HR-SQM-K	UA CAL/SEC-K
1	4448.680	55.4019	94.4687	730.8684	11247.6342

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U-O-S BLOCK SECTION

HEATX COLD-TQCU E-104 TQCURV INLET

PRESSURE PROFILE: CONSTANT2
PRESSURE DROP: 0.0 KPA
PROPERTY OPTION SET: UNIQ-RK UNIQAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

=====

! DUTY	! PRES	! TEMP	! VFRAC	!
! 0.0	! 180.0000	! 85.9099	! 6.3649-06	!
! 211.8419	! 180.0000	! 85.4800	! 6.0654-06	!
! 423.6838	! 180.0000	! 85.0500	! 5.7771-06	!
! 635.5257	! 180.0000	! 84.6197	! 5.4994-06	!
! 847.3676	! 180.0000	! 84.1892	! 5.2316-06	!

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!-----+-----+-----+-----!
! 1059.2095 ! 180.0000 ! 83.7584 ! 4.9734-06 !
! 1271.0514 ! 180.0000 ! 83.3274 ! 4.7242-06 !
! 1482.8933 ! 180.0000 ! 82.8962 ! 4.4836-06 !
! 1694.7352 ! 180.0000 ! 82.4648 ! 4.2513-06 !
! 1906.5771 ! 180.0000 ! 82.0331 ! 4.0267-06 !
!-----+-----+-----+-----!
! 2118.4190 ! 180.0000 ! 81.6012 ! 3.8096-06 !
! 2330.2610 ! 180.0000 ! 81.1690 ! 3.5997-06 !
! 2542.1029 ! 180.0000 ! 80.7367 ! 3.3965-06 !
! 2753.9448 ! 180.0000 ! 80.3041 ! 3.1998-06 !
! 2965.7867 ! 180.0000 ! 79.8712 ! 3.0094-06 !
!-----+-----+-----+-----!
! 3177.6286 ! 180.0000 ! 79.4382 ! 2.8249-06 !
! 3389.4705 ! 180.0000 ! 79.0049 ! 2.6460-06 !
! 3601.3124 ! 180.0000 ! 78.5714 ! 2.4727-06 !
! 3813.1543 ! 180.0000 ! 78.1376 ! 2.3045-06 !
! 4024.9962 ! 180.0000 ! 77.7037 ! 2.1414-06 !
!-----+-----+-----+-----!
! 4236.8381 ! 180.0000 ! 77.2695 ! 1.9831-06 !
! 4448.6800 ! 180.0000 ! 76.8350 ! 1.8295-06 !

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U-O-S BLOCK SECTION

HEATX HOT-TQCUR E-104 TQCURV INLET

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PRESSURE PROFILE:  CONSTANT2
PRESSURE DROP:      0.0      KPA
PROPERTY OPTION SET:  UNIQUAC / REDLICH-KWONG
HENRY-COMPS ID:      HC-1

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-----
! DUTY   ! PRES   ! TEMP   ! VFRAC   !
!        !        !        !         !
!        !        !        !         !
!        !        !        !         !
! KW     ! KPA     ! C       !         !
!        !        !        !         !
!=====!=====!=====!=====!
! 0.0    ! 180.0000 ! 310.0000 ! 1.0000 !
! 211.8419 ! 180.0000 ! 300.5863 ! 1.0000 !
! 423.6838 ! 180.0000 ! 291.1399 ! 1.0000 !
! 635.5257 ! 180.0000 ! 281.6603 ! 1.0000 !
! 847.3676 ! 180.0000 ! 272.1472 ! 1.0000 !
!-----+-----+-----+-----!
! 1059.2095 ! 180.0000 ! 262.6003 ! 1.0000 !
! 1271.0514 ! 180.0000 ! 253.0191 ! 1.0000 !
! 1482.8933 ! 180.0000 ! 243.4033 ! 1.0000 !
! 1694.7352 ! 180.0000 ! 233.7525 ! 1.0000 !
! 1906.5771 ! 180.0000 ! 224.0665 ! 1.0000 !
!-----+-----+-----+-----!
! 2118.4190 ! 180.0000 ! 214.3449 ! 1.0000 !
! 2330.2610 ! 180.0000 ! 204.5874 ! 1.0000 !
! 2542.1029 ! 180.0000 ! 194.7937 ! 1.0000 !
! 2753.9448 ! 180.0000 ! 184.9636 ! 1.0000 !
! 2965.7867 ! 180.0000 ! 175.0970 ! 1.0000 !
!-----+-----+-----+-----!
! 3177.6286 ! 180.0000 ! 165.1935 ! 1.0000 !
! 3389.4705 ! 180.0000 ! 155.2533 ! 1.0000 !
! 3601.3124 ! 180.0000 ! 145.2760 ! 1.0000 !
! 3813.1543 ! 180.0000 ! 135.2620 ! 1.0000 !
! 4024.9962 ! 180.0000 ! 125.2111 ! 1.0000 !
!-----+-----+-----+-----!
! 4236.8381 ! 180.0000 ! 115.1237 ! 1.0000 !
! 4448.6800 ! 180.0000 ! 105.0000 ! 1.0000 !

```

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U-O-S BLOCK SECTION

*** MASS AND ENERGY BALANCE ***

TOTAL BALANCE

*** CO2 EQUIVALENT SUMMARY ***

*** INPUT DATA ***

TWO PHASE FLASH

FLASH SPECS FOR COLD SIDE:

TWO PHASE FLASH

FLOW DIRECTION AND SPECIFICATION:

COUNTERCURRENT HEAT EXCHANGER

SPECIFIED EXCHANGER DUTY

SPECIFIED VALUE	KW	3100.0000
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LMTD CORRECTION FACTOR	1.00000
------------------------	---------

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BLOCK: E-205 MODEL: HEATX (CONTINUED)

PRESSURE SPECIFICATION:

HEAT TRANSFER COEFFICIENT SPECIFICATION:

*** OVERALL RESULTS ***

S4	----->	HOT		-----> S6
T=	1.1067D+02			T= 1.1061D+02
P=	5.7500D+02			P= 5.7500D+02
V=	1.0000D+00			V= 2.0347D-01
15	<-----	COLD		<----- 14
T=	7.6835D+01			T= 7.0452D+01
P=	1.8000D+02			P= 1.8000D+02
V=	1.8295D-06			V= 0.0000D+00

DUTY AND AREA:

CALCULATED HEAT DUTY	KW	3100.0000
CALCULATED (REQUIRED) AREA	SQM	98.8080
ACTUAL EXCHANGER AREA	SQM	98.8080
PER CENT OVER-DESIGN		0.0000

HEAT TRANSFER COEFFICIENT:

AVERAGE COEFFICIENT (DIRTY)	KCAL/HR-SQM-K	730.8684
UA (DIRTY)	CAL/SEC-K	20059.9044

LOG-MEAN TEMPERATURE DIFFERENCE:

LMTD CORRECTION FACTOR		1.0000
LMTD (CORRECTED)	C	36.9106
NUMBER OF SHELLS IN SERIES		1

PRESSURE DROP:

HOTSIDE, TOTAL	KPA	0.0000
COLDSIDE, TOTAL	KPA	0.0000
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U-O-S BLOCK SECTION

BLOCK: E-205 MODEL: HEATX (CONTINUED)

*** ZONE RESULTS ***

TEMPERATURE LEAVING EACH ZONE:

HOT		

HOT IN	COND	HOT OUT
----->		----->
110.7		110.6
COLDOUT	BOIL	COLDIN
<-----		<-----
76.8		70.5

COLD		

ZONE HEAT TRANSFER AND AREA:

ZONE	HEAT DUTY	AREA	LMTD	AVERAGE U	UA
	KW	SQM	C	KCAL/HR-SQM-K	CAL/SEC-K
1	3100.000	98.8080	36.9106	730.8684	20059.9044
ASPEN PLUS PLAT: WIN-X64 VER: 37.0		07/12/2020 PAGE 248			

U-O-S BLOCK SECTION

HEATX COLD-TQCU E-205 TQCURV INLET

PRESSURE PROFILE: CONSTANT2

PRESSURE DROP: 0.0 KPA

PROPERTY OPTION SET: UNIQ-RK UNIQUAC / REDLICH-KWONG

HENRY-COMPS ID: HC-1

DUTY	PRES	TEMP	VFRAC
0.0	180.0000	76.8350	1.8295-06
147.6190	180.0000	76.5322	1.7250-06
295.2381	180.0000	76.2292	1.6227-06
442.8571	180.0000	75.9261	1.5224-06
590.4762	180.0000	75.6230	1.4241-06
738.0952	180.0000	75.3197	1.3277-06
885.7143	180.0000	75.0163	1.2332-06
1033.3333	180.0000	74.7127	1.1405-06
1180.9524	180.0000	74.4091	1.0496-06
1328.5714	180.0000	74.1054	9.6045-07
1476.1905	180.0000	73.8015	8.7296-07
1623.8095	180.0000	73.4976	7.8711-07
1771.4286	180.0000	73.1935	7.0284-07
1919.0476	180.0000	72.8894	6.2013-07
2066.6667	180.0000	72.5851	5.3881-07
2214.2857	180.0000	72.2807	4.5866-07
2361.9048	180.0000	71.9763	3.7962-07
2509.5238	180.0000	71.6717	3.0167-07
2657.1429	180.0000	71.3670	2.2476-07
2804.7619	180.0000	71.0622	1.4887-07
2952.3810	180.0000	70.7573	7.3962-08
3100.0000	180.0000	70.4522	0.0

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U-O-S BLOCK SECTION

HEATX HOT-TQCUR E-205 TQCURV INLET

PRESSURE PROFILE: CONSTANT2
PRESSURE DROP: 0.0 KPA
PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

DUTY	PRES	TEMP	VFRAC
0.0	575.0000	110.6745	1.0000
147.6190	575.0000	110.6731	0.9620
295.2381	575.0000	110.6716	0.9240
442.8571	575.0000	110.6700	0.8861
590.4762	575.0000	110.6684	0.8481
738.0952	575.0000	110.6666	0.8102
885.7143	575.0000	110.6648	0.7722
1033.3333	575.0000	110.6628	0.7343
1180.9524	575.0000	110.6608	0.6963
1328.5714	575.0000	110.6586	0.6584
1476.1905	575.0000	110.6562	0.6205
1623.8095	575.0000	110.6537	0.5825
1771.4286	575.0000	110.6511	0.5446
1919.0476	575.0000	110.6482	0.5067
2066.6667	575.0000	110.6451	0.4688

```

! 2214.2857 ! 575.0000 ! 110.6418 ! 0.4309 !
! 2361.9048 ! 575.0000 ! 110.6381 ! 0.3930 !
! 2509.5238 ! 575.0000 ! 110.6342 ! 0.3551 !
! 2657.1429 ! 575.0000 ! 110.6299 ! 0.3172 !
! 2804.7619 ! 575.0000 ! 110.6252 ! 0.2793 !
!-----+-----+-----+-----!
! 2952.3810 ! 575.0000 ! 110.6200 ! 0.2414 !
! 3100.0000 ! 575.0000 ! 110.6143 ! 0.2035 !
-----

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BLOCK: E-207 MODEL: HEATER

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INLET STREAM:      19
OUTLET STREAM:     21
PROPERTY OPTION SET:  UNIQUAC / REDLICH-KWONG
HENRY-COMPS ID:     HC-1
ASPEN PLUS PLAT: WIN-X64 VER: 37.0          07/12/2020 PAGE 250

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U-O-S BLOCK SECTION

BLOCK: E-207 MODEL: HEATER (CONTINUED)

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	164.090	164.090	0.00000
MASS(KG/HR)	8344.87	8344.87	0.00000
ENTHALPY(KW)	-4588.91	-6072.93	0.244366

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	17.5863	KG/HR
PRODUCT STREAMS CO2E	17.5863	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	298.590	KG/HR
TOTAL CO2E PRODUCTION	298.590	KG/HR

*** INPUT DATA ***

TWO PHASE TP FLASH		
SPECIFIED TEMPERATURE	C	20.0000
PRESSURE DROP	KPA	0.0
MAXIMUM NO. ITERATIONS		30
CONVERGENCE TOLERANCE		0.000100000

*** RESULTS ***

OUTLET TEMPERATURE	C	20.000
OUTLET PRESSURE	KPA	101.00
HEAT DUTY	KW	-1484.0
OUTLET VAPOR FRACTION		0.42704E-02

V-L PHASE EQUILIBRIUM :

COMP	F(I)	X(I)	Y(I)	K(I)
N2	0.14152E-02	0.11272E-04	0.32877	29167.
ARGON	0.35250E-04	0.11962E-05	0.79755E-02	6667.5
O2	0.14895E-03	0.21354E-05	0.34382E-01	16101.
CO2	0.24353E-02	0.13800E-02	0.24848	180.06
PROPYLEN	0.85385E-04	0.60843E-04	0.58076E-02	95.452
FORMA-01	0.29693E-01	0.29498E-01	0.75108E-01	2.5462
ACETALD	0.18132E-01	0.18135E-01	0.17319E-01	0.95499
ACROL	0.83916	0.84163	0.26355	0.31314
H2O	0.10889	0.10928	0.18616E-01	0.17035
AC-ACET	0.12595E-07	0.12648E-07	0.15117E-09	0.11952E-01
AC-ACRY	0.61020E-06	0.61281E-06	0.87518E-09	0.14281E-02

*** ASSOCIATED UTILITIES ***

UTILITY ID FOR REFRIGERANT	REFRI-1
----------------------------	---------

RATE OF CONSUMPTION 1.3356+06 KG/HR
 COST 14.6383 \$/HR
 CO2 EQUIVALENT EMISSIONS 298.5897 KG/HR
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U-O-S BLOCK SECTION

BLOCK: E-208 MODEL: HEATER

 INLET STREAM: 16
 OUTLET STREAM: 17O18
 PROPERTY OPTION SET: UNIQ-RK UNIQUAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	22421.4	22421.4	0.00000
MASS(KG/HR)	407855.	407855.	-0.285433E-15
ENTHALPY(KW)	-0.174728E+07	-0.174027E+07	-0.401344E-02

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	17.5863	KG/HR
PRODUCT STREAMS CO2E	17.5863	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	1659.95	KG/HR
TOTAL CO2E PRODUCTION	1659.95	KG/HR

*** INPUT DATA ***

TWO PHASE TP FLASH		
SPECIFIED TEMPERATURE	C	100.000
SPECIFIED PRESSURE	KPA	180.000
MAXIMUM NO. ITERATIONS		30
CONVERGENCE TOLERANCE		0.000100000

*** RESULTS ***

OUTLET TEMPERATURE	C	100.00
OUTLET PRESSURE	KPA	180.00
HEAT DUTY	KW	7012.6
OUTLET VAPOR FRACTION		0.32351E-04

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U-O-S BLOCK SECTION

BLOCK: E-208 MODEL: HEATER (CONTINUED)

V-L PHASE EQUILIBRIUM :

COMP	F(I)	X(I)	Y(I)	K(I)
N2	0.10357E-04	0.34248E-05	0.21429	62568.
ARGON	0.25797E-06	0.11654E-06	0.43719E-02	37513.
O2	0.10901E-05	0.48729E-06	0.18634E-01	38241.
CO2	0.17822E-04	0.16266E-04	0.48134E-01	2959.3
PROPYLEN	0.62488E-06	0.41633E-06	0.64472E-02	15486.
FORMA-01	0.22157E-03	0.22140E-03	0.54679E-02	24.697
ACETALD	0.83038E-04	0.82994E-04	0.14569E-02	17.555
ACROL	0.35411E-02	0.35367E-02	0.13742	38.855
H2O	0.99545	0.99546	0.56338	0.56594
AC-ACET	0.13860E-03	0.13860E-03	0.29726E-04	0.21447
AC-ACRY	0.53983E-03	0.53983E-03	0.37325E-03	0.69141

*** ASSOCIATED UTILITIES ***

UTILITY ID FOR STEAM	LPS
RATE OF CONSUMPTION	1.1518+04 KG/HR
COST	47.9662 \$/HR
CO2 EQUIVALENT EMISSIONS	1659.9544 KG/HR

BLOCK: E-209 MODEL: HEATER

INLET STREAM: 24
OUTLET STREAM: L
PROPERTY OPTION SET: UNIQ-RK UNIQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***
 IN OUT RELATIVE DIFF.

TOTAL BALANCE
MOLE(KMOL/HR) 156.960 156.960 0.468899E-08
MASS(KG/HR) 8100.98 8100.98 0.572786E-08
ENTHALPY(KW) -5611.76 -5311.40 -0.535243E-01

*** CO2 EQUIVALENT SUMMARY ***
FEED STREAMS CO2E 0.336593E-08 KG/HR
PRODUCT STREAMS CO2E 0.336593E-08 KG/HR
NET STREAMS CO2E PRODUCTION 0.166704E-14 KG/HR
UTILITIES CO2E PRODUCTION 71.0997 KG/HR
TOTAL CO2E PRODUCTION 71.0997 KG/HR

*** INPUT DATA ***
TWO PHASE TP FLASH
SPECIFIED TEMPERATURE C 111.000
PRESSURE DROP KPA 0.0
MAXIMUM NO. ITERATIONS 30
CONVERGENCE TOLERANCE 0.000100000

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U-O-S BLOCK SECTION

BLOCK: E-209 MODEL: HEATER (CONTINUED)

*** RESULTS ***
OUTLET TEMPERATURE C 111.00
OUTLET PRESSURE KPA 575.00
HEAT DUTY KW 300.37
OUTLET VAPOR FRACTION 0.0000

V-L PHASE EQUILIBRIUM :

COMP	F(I)	X(I)	Y(I)	K(I)
CO2	0.48727E-12	0.48727E-12	0.88282E-10	180.35
PROPYLEN	0.87790E-13	0.87790E-13	0.10655E-10	120.81
FORMA-01	0.29460E-03	0.29460E-03	0.93851E-03	3.1711
ACETALD	0.94777E-02	0.94777E-02	0.11710E-01	1.2299
ACROL	0.87640	0.87640	0.82321	0.93498
H2O	0.11383	0.11383	0.16414	1.4354
AC-ACET	0.13167E-07	0.13167E-07	0.21330E-08	0.16125
AC-ACRY	0.63792E-06	0.63792E-06	0.31880E-07	0.49746E-01

*** ASSOCIATED UTILITIES ***

UTILITY ID FOR STEAM LPS
RATE OF CONSUMPTION 493.3288 KG/HR
COST 2.0545 \$/HR
CO2 EQUIVALENT EMISSIONS 71.0997 KG/HR

BLOCK: MIX1 MODEL: MIXER

INLET STREAMS: 7 4 5
OUTLET STREAM: 8
PROPERTY OPTION SET: UNIQ-RK UNIQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***
 IN OUT RELATIVE DIFF.

TOTAL BALANCE			
MOLE(KMOL/HR)	2158.49	2158.49	0.00000
MASS(KG/HR)	53977.6	53977.6	0.134796E-15
ENTHALPY(KW)	-55794.1	-55794.1	-0.130407E-15

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.00000	KG/HR
PRODUCT STREAMS CO2E	0.00000	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	0.00000	KG/HR
TOTAL CO2E PRODUCTION	0.00000	KG/HR

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U-O-S BLOCK SECTION

BLOCK: MIX1 MODEL: MIXER (CONTINUED)

*** INPUT DATA ***

TWO PHASE FLASH
 MAXIMUM NO. ITERATIONS 30
 CONVERGENCE TOLERANCE 0.000100000
 OUTLET PRESSURE: MINIMUM OF INLET STREAM PRESSURES

BLOCK: MIX2 MODEL: MIXER

 INLET STREAMS: 31 26
 OUTLET STREAM: 27
 PROPERTY OPTION SET: UNIQ-RK UNIQAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	78.5194	78.5194	0.00000
MASS(KG/HR)	4351.01	4351.01	0.00000
ENTHALPY(KW)	-2276.19	-2276.19	0.199785E-15

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.00000	KG/HR
PRODUCT STREAMS CO2E	0.00000	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	0.00000	KG/HR
TOTAL CO2E PRODUCTION	0.00000	KG/HR

*** INPUT DATA ***

TWO PHASE FLASH
 MAXIMUM NO. ITERATIONS 30
 CONVERGENCE TOLERANCE 0.000100000
 OUTLET PRESSURE: MINIMUM OF INLET STREAM PRESSURES

BLOCK: P-204 MODEL: PUMP

 INLET STREAM: 23
 OUTLET STREAM: 24
 PROPERTY OPTION SET: UNIQ-RK UNIQAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1
 ASPEN PLUS PLAT: WIN-X64 VER: 37.0 07/12/2020 PAGE 255

U-O-S BLOCK SECTION

BLOCK: P-204 MODEL: PUMP (CONTINUED)

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	156.960	156.960	0.00000
MASS(KG/HR)	8100.98	8100.98	0.00000
ENTHALPY(KW)	-5614.91	-5611.76	-0.560088E-03

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.336593E-08	KG/HR
-------------------	--------------	-------

PRODUCT STREAMS CO2E 0.336593E-08 KG/HR
NET STREAMS CO2E PRODUCTION 0.00000 KG/HR
UTILITIES CO2E PRODUCTION 1.09096 KG/HR
TOTAL CO2E PRODUCTION 1.09096 KG/HR

*** INPUT DATA ***

OUTLET PRESSURE KPA 575.000
DRIVER EFFICIENCY 1.00000

FLASH SPECIFICATIONS:

LIQUID PHASE CALCULATION

NO FLASH PERFORMED

MAXIMUM NUMBER OF ITERATIONS 30

TOLERANCE 0.000100000

*** RESULTS ***

VOLUMETRIC FLOW RATE CUM/HR 10.0859

PRESSURE CHANGE KPA 474.000

NPSH AVAILABLE METER 0.0

FLUID POWER KW 1.32797

BRAKE POWER KW 3.14485

ELECTRICITY KW 3.14485

PUMP EFFICIENCY USED 0.42227

NET WORK REQUIRED KW 3.14485

HEAD DEVELOPED METER 60.1773

*** ASSOCIATED UTILITIES ***

UTILITY ID FOR ELECTRICITY ELECTRIC
RATE OF CONSUMPTION 3.1448 KW
COST 0.2437 \$/HR
CO2 EQUIVALENT EMISSIONS 1.0910 KG/HR

BLOCK: R-101 MODEL: RPLUG

INLET STREAM: 8A
OUTLET STREAM: 9
PROPERTY OPTION SET: UNIQ-RK UNIQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

IN OUT GENERATION RELATIVE DIFF.
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U-O-S BLOCK SECTION

BLOCK: R-101 MODEL: RPLUG (CONTINUED)

TOTAL BALANCE
MOLE(KMOL/HR) 2156.94 2159.29 2.35129 0.00000
MASS(KG/HR) 53977.6 53977.6 0.943572E-14
ENTHALPY(KW) -56432.6 -74947.3 0.247035

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E 0.00000 KG/HR
PRODUCT STREAMS CO2E 2218.92 KG/HR
NET STREAMS CO2E PRODUCTION 2218.92 KG/HR
UTILITIES CO2E PRODUCTION 0.00000 KG/HR
TOTAL CO2E PRODUCTION 2218.92 KG/HR

*** INPUT DATA ***

REACTOR TYPE:

SPECIFIED TEMPERATURE

VAPOR FLUID PHASE

REACTOR TUBE LENGTH METER 4.8127

REACTOR DIAMETER METER 0.80000

REACTOR RISE METER 0.0000

NUMBER OF REACTOR TUBES 15

REACTOR VOLUME CUM 36.287

PRESSURE DROP OPTION: SPECIFIED

HOLDUP OPTION: NO-SLIP

ERROR TOLERANCE	0.10000E-03
INTEGRATION METHOD	GEAR
CORRECTOR METHOD	NEWTON
INITIAL STEP SIZE FACTOR	0.10000E-01
CORRECTOR TOLERANCE FACTOR	0.10000
MAXIMUM NUMBER OF STEPS	1000

TEMPERATURE PROFILES:

RELATIVE LOCATION	TEMPERATURE
0.0000 310.00	C

REACTION PARAGRAPH	ID: R-1	TYPE: GENERAL
GLOBAL BASES:		
KBASIS	MOLE-GAMMA	
CBASIS	MOLARITY	
SBASIS	GLOBAL	

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U-O-S BLOCK SECTION

BLOCK: R-101 MODEL: RPLUG (CONTINUED)
STOICHIOMETRY:

REACTION NUMBER:	1						
SUBSTREAM: MIXED							
O2	-1.0000	PROPYLEN	-1.0000	ACROL	1.0000	H2O	1.0000

REACTION NUMBER:	2						
SUBSTREAM: MIXED							
O2	-3.5000	CO2	3.0000	ACROL	-1.0000	H2O	2.0000

REACTION NUMBER:	3						
SUBSTREAM: MIXED							
O2	-0.50000	ACROL	-1.0000	AC-ACRY	1.0000		

REACTION NUMBER:	4						
SUBSTREAM: MIXED							
O2	-4.5000	CO2	3.0000	PROPYLEN	-1.0000	H2O	3.0000

REAC-DATA ENTRIES:

REACTION NO	TYPE	PHASE	DELT	BASIS
		C		
1	KINETIC	V	0.0000	PARTIALPRES
2	KINETIC	V	0.0000	PARTIALPRES
3	KINETIC	V	0.0000	PARTIALPRES
4	KINETIC	V	0.0000	PARTIALPRES

*** RESULTS ***

REACTOR DUTY	KW	-18515.
RESIDENCE TIME	HR	0.25000E-03
REACTOR MINIMUM TEMPERATURE C		310.00
REACTOR MAXIMUM TEMPERATURE C		310.00
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U-O-S BLOCK SECTION

BLOCK: R-101 MODEL: RPLUG (CONTINUED)

*** RESULTS PROFILE (PROCESS STREAM) ***

LENGTH	PRESSURE	TEMPERATURE	VAPOR FRAC	RES-TIME
METER	KPA	C		HR

0.0000	180.00	310.00	1.0000	0.0000
0.48127	180.00	310.00	1.0000	0.25008E-04
0.96254	180.00	310.00	1.0000	0.50014E-04
1.4438	180.00	310.00	1.0000	0.75018E-04
1.9251	180.00	310.00	1.0000	0.10002E-03
2.4064	180.00	310.00	1.0000	0.12502E-03
2.8876	180.00	310.00	1.0000	0.15002E-03
3.3689	180.00	310.00	1.0000	0.17502E-03
3.8502	180.00	310.00	1.0000	0.20001E-03
4.3314	180.00	310.00	1.0000	0.22501E-03
4.8127	180.00	310.00	1.0000	0.25000E-03

LENGTH METER	DUTY KW	LIQUID HOLDUP
0.0000	0.0000	0.0000
0.48127	-2337.6	0.0000
0.96254	-4485.6	0.0000
1.4438	-6488.9	0.0000
1.9251	-8383.0	0.0000
2.4064	-10193.	0.0000
2.8876	-11937.	0.0000
3.3689	-13630.	0.0000
3.8502	-15284.	0.0000
4.3314	-16909.	0.0000
4.8127	-18515.	0.0000

*** TOTAL MOLE FRACTION PROFILE (PROCESS STREAM) ***

LENGTH METER	N2	ARGON	O2	CO2
0.0000	0.39931	0.52876E-02	0.10436	0.0000
0.48127	0.39926	0.52869E-02	0.93845E-01	0.21818E-02
0.96254	0.39921	0.52862E-02	0.84281E-01	0.43904E-02
1.4438	0.39916	0.52856E-02	0.75449E-01	0.66314E-02
1.9251	0.39912	0.52850E-02	0.67174E-01	0.89072E-02
2.4064	0.39907	0.52844E-02	0.59334E-01	0.11219E-01
2.8876	0.39903	0.52839E-02	0.51836E-01	0.13566E-01
3.3689	0.39899	0.52833E-02	0.44608E-01	0.15950E-01
3.8502	0.39895	0.52828E-02	0.37592E-01	0.18373E-01
4.3314	0.39892	0.52823E-02	0.30740E-01	0.20838E-01
4.8127	0.39888	0.52818E-02	0.24007E-01	0.23350E-01

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U-O-S BLOCK SECTION

BLOCK: R-101 MODEL: RPLUG (CONTINUED)

*** TOTAL MOLE FRACTION PROFILE (PROCESS STREAM) ***

LENGTH METER	PROPYLEN	FORMA-01	ACETALD	ACROL
0.0000	0.55323E-01	0.23051E-02	0.86442E-03	0.0000
0.48127	0.47585E-01	0.23048E-02	0.86430E-03	0.65539E-02
0.96254	0.40845E-01	0.23045E-02	0.86419E-03	0.12069E-01
1.4438	0.34888E-01	0.23042E-02	0.86409E-03	0.16762E-01
1.9251	0.29541E-01	0.23040E-02	0.86399E-03	0.20809E-01
2.4064	0.24682E-01	0.23037E-02	0.86390E-03	0.24335E-01
2.8876	0.20217E-01	0.23035E-02	0.86381E-03	0.27434E-01
3.3689	0.16074E-01	0.23033E-02	0.86373E-03	0.30180E-01
3.8502	0.12197E-01	0.23030E-02	0.86364E-03	0.32629E-01
4.3314	0.85408E-02	0.23028E-02	0.86356E-03	0.34826E-01
4.8127	0.50678E-02	0.23026E-02	0.86348E-03	0.36806E-01

LENGTH METER	H2O	AC-ACET	AC-ACRY
0.0000	0.43111	0.14407E-02	0.0000

0.48127	0.44023	0.14405E-02	0.44905E-03
0.96254	0.44838	0.14403E-02	0.93046E-03
1.4438	0.45577	0.14401E-02	0.14406E-02
1.9251	0.46258	0.14400E-02	0.19759E-02
2.4064	0.46893	0.14398E-02	0.25336E-02
2.8876	0.47491	0.14397E-02	0.31115E-02
3.3689	0.48060	0.14395E-02	0.37082E-02
3.8502	0.48604	0.14394E-02	0.43227E-02
4.3314	0.49130	0.14393E-02	0.49549E-02
4.8127	0.49640	0.14391E-02	0.56054E-02

*** TOTAL MASS FRACTION PROFILE (PROCESS STREAM) ***

LENGTH METER	N2	ARGON	O2	CO2
0.0000	0.44700	0.84407E-02	0.13344	0.0000
0.48127	0.44700	0.84407E-02	0.12001	0.38375E-02
0.96254	0.44700	0.84407E-02	0.10780	0.77232E-02
1.4438	0.44700	0.84407E-02	0.96511E-01	0.11667E-01
1.9251	0.44700	0.84407E-02	0.85936E-01	0.15672E-01
2.4064	0.44700	0.84407E-02	0.75914E-01	0.19741E-01
2.8876	0.44700	0.84407E-02	0.66328E-01	0.23874E-01
3.3689	0.44700	0.84407E-02	0.57085E-01	0.28073E-01
3.8502	0.44700	0.84407E-02	0.48111E-01	0.32341E-01
4.3314	0.44700	0.84407E-02	0.39345E-01	0.36683E-01
4.8127	0.44700	0.84407E-02	0.30730E-01	0.41108E-01

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U-O-S BLOCK SECTION

BLOCK: R-101 MODEL: RPLUG (CONTINUED)

*** TOTAL MASS FRACTION PROFILE (PROCESS STREAM) ***

LENGTH METER	PROPYLEN	FORMA-01	ACETALD	ACROL
0.0000	0.93028E-01	0.27658E-02	0.15217E-02	0.0000
0.48127	0.80027E-01	0.27658E-02	0.15217E-02	0.14685E-01
0.96254	0.68701E-01	0.27658E-02	0.15217E-02	0.27046E-01
1.4438	0.58689E-01	0.27658E-02	0.15217E-02	0.37567E-01
1.9251	0.49700E-01	0.27658E-02	0.15217E-02	0.46642E-01
2.4064	0.41529E-01	0.27658E-02	0.15217E-02	0.54550E-01
2.8876	0.34019E-01	0.27658E-02	0.15217E-02	0.61503E-01
3.3689	0.27050E-01	0.27658E-02	0.15217E-02	0.67667E-01
3.8502	0.20528E-01	0.27658E-02	0.15217E-02	0.73166E-01
4.3314	0.14376E-01	0.27658E-02	0.15217E-02	0.78099E-01
4.8127	0.85310E-02	0.27658E-02	0.15217E-02	0.82547E-01

LENGTH METER	H2O	AC-ACET	AC-ACRY
0.0000	0.31035	0.34572E-02	0.0000
0.48127	0.31696	0.34572E-02	0.12933E-02
0.96254	0.32287	0.34572E-02	0.26801E-02
1.4438	0.32823	0.34572E-02	0.41499E-02
1.9251	0.33317	0.34572E-02	0.56927E-02
2.4064	0.33778	0.34572E-02	0.73003E-02
2.8876	0.34213	0.34572E-02	0.89665E-02
3.3689	0.34625	0.34572E-02	0.10687E-01
3.8502	0.35021	0.34572E-02	0.12459E-01
4.3314	0.35403	0.34572E-02	0.14283E-01
4.8127	0.35774	0.34572E-02	0.16159E-01

BLOCK: R-IMAG MODEL: RSTOIC

 INLET STREAM: 8
 OUTLET STREAM: 8A

PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	GENERATION	RELATIVE DIFF.
TOTAL BALANCE				
MOLE(KMOL/HR)	2158.49	2156.94	-1.55375	0.00000
MASS(KG/HR)	53977.6	53977.6	-0.269592E-15	
ENTHALPY(KW)	-55794.1	-56432.6	0.113156E-01	
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U-O-S BLOCK SECTION

BLOCK: R-IMAG MODEL: RSTOIC (CONTINUED)

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.00000	KG/HR
PRODUCT STREAMS CO2E	0.00000	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	0.00000	KG/HR
TOTAL CO2E PRODUCTION	0.00000	KG/HR

*** INPUT DATA ***

STOICHIOMETRY MATRIX:

REACTION # 1:
SUBSTREAM MIXED :
O2 -1.50 PROPYLEN -1.00 FORMA-01 1.00 AC-ACET 1.00

REACTION # 2:
SUBSTREAM MIXED :
O2 -1.00 PROPYLEN -1.00 FORMA-01 1.00 ACETALD 1.00

REACTION CONVERSION SPECS: NUMBER= 2

REACTION # 1:
SUBSTREAM:MIXED KEY COMP:PROPYLEN CONV FRAC: 0.2500E-01
REACTION # 2:
SUBSTREAM:MIXED KEY COMP:PROPYLEN CONV FRAC: 0.1500E-01

ONE PHASE TP FLASH SPECIFIED PHASE IS VAPOR
SPECIFIED TEMPERATURE C 310.000
PRESSURE DROP KPA 0.0
MAXIMUM NO. ITERATIONS 30
CONVERGENCE TOLERANCE 0.000100000
SIMULTANEOUS REACTIONS
GENERATE COMBUSTION REACTIONS FOR FEED SPECIES NO

*** RESULTS ***

OUTLET TEMPERATURE C	310.00
OUTLET PRESSURE KPA	180.00
HEAT DUTY KW	-638.57

REACTION EXTENTS:

REACTION NUMBER	REACTION EXTENT KMOL/HR
1	3.1075
2	1.8645

BLOCK: SPLIT MODEL: FSPLIT

INLET STREAM: 25
OUTLET STREAMS: 28 29
PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG

U-O-S BLOCK SECTION

BLOCK: SPLIT MODEL: FSPLIT (CONTINUED)

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	78.4802	78.4802	0.181076E-15
MASS(KG/HR)	3754.28	3754.28	0.242256E-15
ENTHALPY(KW)	-3031.15	-3031.15	-0.150025E-15

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.336593E-08	KG/HR
PRODUCT STREAMS CO2E	0.336593E-08	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	0.00000	KG/HR
TOTAL CO2E PRODUCTION	0.00000	KG/HR

*** INPUT DATA ***

FRACTION OF FLOW STRM=28 FRAC= 0.025000

*** RESULTS ***

STREAM= 28	SPLIT=	0.025000	KEY= 0	STREAM-ORDER= 1
29	0.97500	0	2	

BLOCK: T-201 MODEL: RADFRAC

INLETS - 11 STAGE 8
12 STAGE 1
OUTLETS - 13 STAGE 1
14 STAGE 8
PROPERTY OPTION SET: UNIQ-RK UNIQAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	23449.4	23449.4	-0.155141E-15
MASS(KG/HR)	437525.	437525.	-0.399115E-15
ENTHALPY(KW)	-0.176298E+07	-0.176298E+07	-0.291892E-09

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U-O-S BLOCK SECTION

BLOCK: T-201 MODEL: RADFRAC (CONTINUED)

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	2218.92	KG/HR
PRODUCT STREAMS CO2E	2218.92	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	0.00000	KG/HR
TOTAL CO2E PRODUCTION	0.00000	KG/HR

**** INPUT DATA ****

**** INPUT PARAMETERS ****

NUMBER OF STAGES	8
ALGORITHM OPTION	STANDARD
ABSORBER OPTION	YES
INITIALIZATION OPTION	STANDARD
HYDRAULIC PARAMETER CALCULATIONS	NO

INSIDE LOOP CONVERGENCE METHOD	BROYDEN
DESIGN SPECIFICATION METHOD	NESTED
MAXIMUM NO. OF OUTSIDE LOOP ITERATIONS	150
MAXIMUM NO. OF INSIDE LOOP ITERATIONS	10
MAXIMUM NUMBER OF FLASH ITERATIONS	30
FLASH TOLERANCE	0.000100000
OUTSIDE LOOP CONVERGENCE TOLERANCE	0.000100000

**** COL-SPECS ****

MOLAR VAPOR DIST / TOTAL DIST	1.00000
CONDENSER DUTY (W/O SUBCOOL) KW	0.0
REBOILER DUTY KW	0.0

**** PROFILES ****

P-SPEC	STAGE 1 PRES, KPA	180.000
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U-O-S BLOCK SECTION

BLOCK: T-201 MODEL: RADFRAC (CONTINUED)

 **** RESULTS ****

*** COMPONENT SPLIT FRACTIONS ***

OUTLET STREAMS

	13	14
COMPONENT:		
N2	.99973	.26962E-03
ARGON	.99949	.50716E-03
O2	.99953	.47151E-03
CO2	.99207	.79256E-02
PROPYLEN	.99872	.12804E-02
FORMA-01	.83924E-03	.99916
ACETALD	.14284E-02	.99857
ACROL	.10000E-02	.99900
H2O	.19114E-02	.99809
AC-ACET	0.0000	1.0000
AC-ACRY	0.0000	1.0000

*** SUMMARY OF KEY RESULTS ***

TOP STAGE TEMPERATURE	C	40.0178
BOTTOM STAGE TEMPERATURE	C	70.4522
TOP STAGE LIQUID FLOW	KMOL/HR	21,291.6
BOTTOM STAGE LIQUID FLOW	KMOL/HR	22,421.4
TOP STAGE VAPOR FLOW	KMOL/HR	1,028.05
BOILUP VAPOR FLOW	KMOL/HR	1,313.91
CONDENSER DUTY (W/O SUBCOOL) KW		0.0
REBOILER DUTY KW		0.0

**** MANIPULATED VARIABLES ****

	BOUNDS	CALCULATED
	LOWER	UPPER
	VALUE	VALUE
FEED FLOW-STREAM 12	KMOL/HR	10000. 50000. 21290.

**** DESIGN SPECIFICATIONS ****

NO	SPEC-TYPE	QUALIFIERS	UNIT	SPECIFIED	CALCULATED
		VALUE	VALUE		
1	MOLE-RECOV	STREAMS: 14		0.99900	0.99900
	COMPS:	ACROL			

U-O-S BLOCK SECTION

BLOCK: T-201 MODEL: RADFRAC (CONTINUED)

**** MAXIMUM FINAL RELATIVE ERRORS ****

DEW POINT 0.11604E-07 STAGE= 6
 BUBBLE POINT 0.10600E-07 STAGE= 7
 COMPONENT MASS BALANCE 0.52549E-15 STAGE= 3 COMP=N2
 ENERGY BALANCE 0.11129E-09 STAGE= 8

**** PROFILES ****

NOTE REPORTED VALUES FOR STAGE LIQUID AND VAPOR RATES ARE THE FLOWS
 FROM THE STAGE INCLUDING ANY SIDE PRODUCT.

STAGE	TEMPERATURE C	PRESSURE KPA	ENTHALPY		HEAT DUTY KW
			LIQUID	VAPOR	
1	40.018	180.00	-67.994	-6.8206	
2	40.032	180.00	-67.993	-6.8926	
7	47.499	180.00	-67.680	-8.5029	
8	70.452	180.00	-67.297	-14.957	

STAGE	FLOW RATE		FEED RATE		PRODUCT RATE	
	LIQUID KMOL/HR	VAPOR KMOL/HR	LIQUID KMOL/HR	VAPOR KMOL/HR	MIXED KMOL/HR	VAPOR KMOL/HR
1	0.2129E+05	1028.	.21290+05		1028.0525	
2	0.2129E+05	1030.				
7	0.2158E+05	1099.				
8	0.2242E+05	1314.		2159.2875	.22421+05	

**** MASS FLOW PROFILES ****

STAGE	FLOW RATE		FEED RATE		PRODUCT RATE	
	LIQUID KG/HR	VAPOR KG/HR	LIQUID KG/HR	VAPOR KG/HR	MIXED KG/HR	VAPOR KG/HR
1	0.3836E+06	0.2967E+05	.38355+06		.29671+05	
2	0.3836E+06	0.2973E+05				
7	0.3922E+06	0.3264E+05				
8	0.4079E+06	0.3828E+05		.53978+05	.40785+06	

**** MOLE-X-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.14711E-04	0.40039E-06	0.16746E-05	0.37281E-04	0.12708E-05
2	0.14694E-04	0.40016E-06	0.16732E-05	0.37812E-04	0.12722E-05
7	0.13246E-04	0.36210E-06	0.14789E-05	0.31136E-04	0.10686E-05
8	0.10357E-04	0.25797E-06	0.10901E-05	0.17822E-04	0.62488E-06

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U-O-S BLOCK SECTION

BLOCK: T-201 MODEL: RADFRAC (CONTINUED)

**** MOLE-X-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.51478E-06	0.32723E-06	0.99596E-05	0.99993	0.47242E-25
2	0.18638E-05	0.11809E-05	0.36473E-04	0.99990	0.77700E-22
7	0.20200E-03	0.10460E-03	0.40474E-02	0.99559	0.51160E-06
8	0.22157E-03	0.83038E-04	0.35411E-02	0.99545	0.13860E-03

**** MOLE-X-PROFILE ****

STAGE	AC-ACRY
1	0.47243E-21
2	0.25213E-18
7	0.61921E-05

8 0.53983E-03

**** MOLE-Y-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.83757	0.11088E-01	0.50399E-01	0.48654E-01	0.10631E-01
2	0.83665	0.11080E-01	0.50360E-01	0.49354E-01	0.10641E-01
7	0.78367	0.10379E-01	0.47171E-01	0.46211E-01	0.99670E-02
8	0.65556	0.86817E-02	0.39458E-01	0.38580E-01	0.83353E-02

**** MOLE-Y-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.40589E-05	0.25906E-05	0.77307E-04	0.41576E-01	0.59396E-27
2	0.14699E-04	0.93540E-05	0.28316E-03	0.41607E-01	0.97758E-24
7	0.18669E-02	0.11160E-02	0.38570E-01	0.61050E-01	0.95850E-08
8	0.33203E-02	0.17197E-02	0.66523E-01	0.17771	0.84011E-05

**** MOLE-Y-PROFILE ****

STAGE	AC-ACRY
1	0.18332E-22
2	0.97883E-20
7	0.35044E-06
8	0.10168E-03

**** K-VALUES ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	56936.	27694.	30096.	1305.1	8365.2
2	56937.	27690.	30098.	1305.2	8364.6
7	59161.	28662.	31896.	1484.2	9327.0
8	63296.	33653.	36197.	2164.7	13339.

**** K-VALUES ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	7.8847	7.9168	7.7620	0.41579E-01	0.12573E-01
2	7.8865	7.9208	7.7637	0.41611E-01	0.12581E-01
7	9.2422	10.669	9.5296	0.61321E-01	0.18735E-01
8	14.985	20.709	18.786	0.17852	0.60616E-01

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U-O-S BLOCK SECTION

BLOCK: T-201 MODEL: RADFRAC (CONTINUED)

**** K-VALUES ****

STAGE	AC-ACRY
1	0.38804E-01
2	0.38823E-01
7	0.56595E-01
8	0.18836

**** MASS-X-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.22873E-04	0.88776E-06	0.29742E-05	0.91067E-04	0.29682E-05
2	0.22846E-04	0.88720E-06	0.29715E-05	0.92359E-04	0.29712E-05
7	0.20416E-04	0.79585E-06	0.26036E-05	0.75391E-04	0.24741E-05
8	0.15950E-04	0.56654E-06	0.19176E-05	0.43119E-04	0.14456E-05

**** MASS-X-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.85791E-06	0.80011E-06	0.30992E-04	0.99985	0.15746E-24
2	0.31059E-05	0.28874E-05	0.11349E-03	0.99976	0.25897E-21
7	0.33371E-03	0.25352E-03	0.12484E-01	0.98680	0.16903E-05
8	0.36573E-03	0.20110E-03	0.10914E-01	0.98586	0.45755E-03

**** MASS-X-PROFILE ****

STAGE	AC-ACRY
1	0.18896E-20
2	0.10084E-17
7	0.24550E-04
8	0.21386E-02

**** MASS-Y-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.81297	0.15348E-01	0.55878E-01	0.74192E-01	0.15500E-01
2	0.81161	0.15328E-01	0.55803E-01	0.75216E-01	0.15507E-01
7	0.73922	0.13961E-01	0.50825E-01	0.68481E-01	0.14123E-01
8	0.63028	0.11903E-01	0.43334E-01	0.58273E-01	0.12038E-01

**** MASS-Y-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.42227E-05	0.39543E-05	0.15017E-03	0.25952E-01	0.12359E-26
2	0.15283E-04	0.14270E-04	0.54974E-03	0.25957E-01	0.20329E-23
7	0.18876E-02	0.16554E-02	0.72813E-01	0.37034E-01	0.19382E-07
8	0.34216E-02	0.26000E-02	0.12800	0.10988	0.17315E-04

**** MASS-Y-PROFILE ****

STAGE	AC-ACRY
1	0.45773E-22
2	0.24426E-19
7	0.85036E-06
8	0.25148E-03

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U-O-S BLOCK SECTION

BLOCK: T-201 MODEL: RADFRAC (CONTINUED)

 ***** HYDRAULIC PARAMETERS *****

*** DEFINITIONS ***

MARANGONI INDEX = SIGMA - SIGMATO
 FLOW PARAM = (ML/MV)*SQRT(RHOV/RHOL)
 QR = QV*SQRT(RHOV/(RHOL-RHOV))
 F FACTOR = QV*SQRT(RHOV)
 WHERE:
 SIGMA IS THE SURFACE TENSION OF LIQUID FROM THE STAGE
 SIGMATO IS THE SURFACE TENSION OF LIQUID TO THE STAGE
 ML IS THE MASS FLOW OF LIQUID FROM THE STAGE
 MV IS THE MASS FLOW OF VAPOR TO THE STAGE
 RHOL IS THE MASS DENSITY OF LIQUID FROM THE STAGE
 RHOV IS THE MASS DENSITY OF VAPOR TO THE STAGE
 QV IS THE VOLUMETRIC FLOW RATE OF VAPOR TO THE STAGE

TEMPERATURE

STAGE	C	LIQUID FROM	VAPOR TO
1	40.018	40.032	
2	40.032	40.071	
7	47.499	70.452	
8	70.452	105.00	

	MASS FLOW		VOLUME FLOW		MOLECULAR WEIGHT	
	KG/HR		CUM/HR			
STAGE	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO
1	0.38361E+06	29731.	391.70	14874.	18.017	28.878
2	0.38364E+06	29767.	391.75	14887.	18.018	28.892
7	0.39216E+06	38283.	404.70	20783.	18.176	29.137
8	0.40785E+06	53978.	431.04	37502.	18.190	24.998

	DENSITY		VISCOSITY		SURFACE TENSION	
	KG/CUM		CP		DYNE/CM	
STAGE	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO	LIQUID FROM	
1	979.35	1.9988	0.67075	0.18236E-01	69.753	
2	979.32	1.9996	0.67055	0.18231E-01	69.749	
7	969.02	1.8421	0.58253	0.18257E-01	68.101	

U-O-S BLOCK SECTION

BLOCK: T-201 MODEL: RADFRAC (CONTINUED)

STAGE	MARANGONI INDEX DYNE/CM	FLOW PARAM CUM/HR	QR (GM-L)**.5/MIN	REDUCED F-FACTOR
1	0.58290	672.66	0.35049E+06	
2	-.42713E-02	0.58237	673.36	0.35084E+06
7	-1.2402	0.44662	906.99	0.47012E+06
8	-4.3923	0.29470	1463.7	0.74986E+06

 ***** PACKING SIZING CALCULATIONS *****

 *** SECTION 1 ***

STARTING STAGE NUMBER	1
ENDING STAGE NUMBER	8
CAPACITY CALCULATION METHOD	WALLIS
PRESSURE DROP CALCULATION METHOD	WALLIS
LIQUID HOLDUP CALCULATION METHOD	STICHL
PRESSURE PROFILE UPDATED	NO

DESIGN PARAMETERS

OVERDESIGN FACTOR	1.00000
SYSTEM FOAMING FACTOR	1.00000
FRAC. APP. TO MAXIMUM CAPACITY	0.80000
MAXIMUM CAPACITY FACTOR M/SEC	MISSING
DESIGN CAPACITY FACTOR M/SEC	MISSING
PRESSURE DROP FOR THE SECTION KPA	MISSING
PRESSURE DROP PER UNIT HEIGHT MM-WATER/M	MISSING

PACKING SPECIFICATIONS

PACKING TYPE	PALL-RING
PACKING MATERIAL	METAL
PACKING SIZE	2-IN
VENDOR	GENERIC
PACKING FACTOR 1/M	66.0000
PACKING SURFACE AREA SQCM/CC	1.15000
PACKING VOID FRACTION	0.96000
FIRST STICHLMAIR CONSTANT	0.89132
SECOND STICHLMAIR CONSTANT	-0.060873
THIRD STICHLMAIR CONSTANT	2.30325
HETP METER	0.062500
PACKING HEIGHT METER	0.50000

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U-O-S BLOCK SECTION

BLOCK: T-201 MODEL: RADFRAC (CONTINUED)

***** SIZING RESULTS *****

COLUMN DIAMETER	METER	2.86568
MAXIMUM FRACTIONAL CAPACITY		0.80000
MAXIMUM CAPACITY FACTOR M/SEC		0.063040
PRESSURE DROP FOR THE SECTION KPA		0.066490

AVERAGE PRESSURE DROP/HEIGHT	MM-WATER/M	13.5602
MAXIMUM LIQUID HOLDUP/STAGE	CUM	0.041011
MAX LIQ SUPERFICIAL VELOCITY	CUM/HR/SQM	66.8297

*** RATING PROFILES AT MAXIMUM COLUMN DIAMETER ***

HEIGHT FROM TOP STAGE OF SECTION	FRACTIONAL CAPACITY	PRESSURE DROP	PRESSURE DROP/HEIGHT	LIQUID HOLDUP	HETP
METER	KPA	MM-WATER/M	CUM	METER	
1	0.000	0.4660	0.52126E-02	6.5057	0.3571E-01 0.6250E-01
2	0.6250E-01	0.4664	0.52216E-02	6.5197	0.3572E-01 0.6250E-01
3	0.1250	0.4672	0.52455E-02	6.5568	0.3573E-01 0.6250E-01
4	0.1875	0.4695	0.53101E-02	6.6572	0.3575E-01 0.6250E-01
5	0.2500	0.4757	0.54917E-02	6.9441	0.3582E-01 0.6250E-01
6	0.3125	0.4955	0.60877E-02	7.9231	0.3601E-01 0.6250E-01
7	0.3750	0.5693	0.88724E-02	12.634	0.3675E-01 0.6250E-01
8	0.4375	0.8000	0.25049E-01	39.428	0.4101E-01 0.6250E-01

LIQUID
SUPERFICIAL
STAGE VELOCITY
CUM/HR/SQM

1	60.73
2	60.74
3	60.76
4	60.81
5	60.96
6	61.38
7	62.75
8	66.83

BLOCK: T-202 MODEL: RADFRAC

 INLETS - 17O18 STAGE 5
 30 STAGE 3
 OUTLETS - 19 STAGE 1
 20 STAGE 6
 PROPERTY OPTION SET: UNIQ-RK UNIQAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1
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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	22497.9	22497.9	0.00000
MASS(KG/HR)	411515.	411515.	-0.282894E-15
ENTHALPY(KW)	-0.174322E+07	-0.174234E+07	-0.507478E-03

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	17.5863	KG/HR
PRODUCT STREAMS CO2E	17.5863	KG/HR
NET STREAMS CO2E PRODUCTION	0.00000	KG/HR
UTILITIES CO2E PRODUCTION	6774.87	KG/HR
TOTAL CO2E PRODUCTION	6774.87	KG/HR

 INPUT DATA

**** INPUT PARAMETERS ****

NUMBER OF STAGES	6
ALGORITHM OPTION	3-PHASE

ABSORBER OPTION	NO
INITIALIZATION OPTION	STANDARD
HYDRAULIC PARAMETER CALCULATIONS	NO
INSIDE LOOP CONVERGENCE METHOD	BROYDEN
DESIGN SPECIFICATION METHOD	NESTED
MAXIMUM NO. OF OUTSIDE LOOP ITERATIONS	25
MAXIMUM NO. OF INSIDE LOOP ITERATIONS	10
MAXIMUM NUMBER OF FLASH ITERATIONS	30
FLASH TOLERANCE	0.000100000
OUTSIDE LOOP CONVERGENCE TOLERANCE	0.000100000

**** COL-SPECS ****

MOLAR VAPOR DIST / TOTAL DIST	1.00000
MOLAR REFLUX RATIO	5.00000
DISTILLATE TO FEED RATIO	0.0083000

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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

**** L2-STAGES SPECIFICATIONS ****

TWO LIQUID PHASE CALCULATIONS ARE PERFORMED FOR STAGE TO STAGE
1 6

**** L2-COMPS SPECIFICATIONS ****

KEY COMPONENTS IN THE SECOND LIQUID PHASE	COMPONENT
H2O	

**** PROFILES ****

P-SPEC	STAGE 1 PRES, KPA	101.000
--------	-------------------	---------

**** RESULTS ****

*** COMPONENT SPLIT FRACTIONS ***

OUTLET STREAMS

	19	20
COMPONENT:		
N2	1.0000	.67473E-11
ARGON	1.0000	.30734E-10
O2	1.0000	.30025E-10
CO2	1.0000	.64779E-07
PROPYLEN	1.0000	.41734E-09
FORMA-01	.97198	.28019E-01
ACETALD	.96937	.30628E-01
ACROL	.99400	.60000E-02
H2O	.80000E-03	.99920
AC-ACET	.66506E-06	1.0000
AC-ACRY	.82724E-05	.99999

*** SUMMARY OF KEY RESULTS ***

TOP STAGE TEMPERATURE	C	50.7455
BOTTOM STAGE TEMPERATURE	C	99.8408
TOP STAGE LIQUID FLOW	KMOL/HR	3,296.13
BOTTOM STAGE LIQUID FLOW	KMOL/HR	22,333.8
TOP STAGE VAPOR FLOW	KMOL/HR	164.090
BOILUP VAPOR FLOW	KMOL/HR	2,508.12
MOLAR REFLUX RATIO		20.0874
MOLAR BOILUP RATIO		0.11230
CONDENSER DUTY (W/O SUBCOOL)	KW	-27,736.5

U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

**** MANIPULATED VARIABLES ****

	BOUNDS		CALCULATED	
	LOWER	UPPER	VALUE	
MOLAR REFLUX RATIO		0.50000	35.000	20.087
DISTILLATE TO FEED RATIO		0.10000E-03	0.10000E-01	0.72936E-02

**** DESIGN SPECIFICATIONS ****

NO	SPEC-TYPE	QUALIFIERS	UNIT	SPECIFIED	CALCULATED
		VALUE		VALUE	
1	MOLE-RECOV	STREAMS: 19		0.99400	0.99400
		COMPS: ACROL			
		BASE-STREAMS: 17O18			
		30			
2	MOLE-RECOV	STREAMS: 20		0.99920	0.99920
		COMPS: H2O			
		BASE-STREAMS: 17O18			
		30			

**** MAXIMUM FINAL RELATIVE ERRORS ****

DEW POINT 0.48249E-08 STAGE= 2 PHASE=L2
 BUBBLE POINT 0.15580E-07 STAGE= 2 PHASE=L2
 COMPONENT MASS BALANCE 0.28030E-05 STAGE= 2 COMP=N2
 ENERGY BALANCE 0.29824E-06 STAGE= 3

**** PROFILES ****

NOTE REPORTED VALUES FOR STAGE LIQUID AND VAPOR RATES ARE THE FLOWS
 FROM THE STAGE INCLUDING ANY SIDE PRODUCT.

STAGE	TEMPERATURE	PRESSURE	ENTHALPY		HEAT DUTY
			LIQUID	VAPOR	
	C	KPA			KW
1	50.745	101.00	-32.220	-24.046	-.27736+05
2	54.826	101.00	-64.411	-24.940	
3	96.173	101.00	-66.890	-52.312	
4	98.923	101.00	-66.899	-55.852	
5	99.278	101.00	-66.901	-56.313	
6	99.841	101.00	-66.903	-57.070	.28621+05

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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

STAGE	FLOW RATE		FEED RATE		PRODUCT RATE	
	LIQUID	VAPOR	LIQUID	VAPOR	MIXED	LIQUID VAPOR
	KMOL/HR		KMOL/HR		KMOL/HR	
1	3296.	164.1			164.0895	
2	2312.	3460.	18.4899			
3	2477.	2458.	58.0282			
4	2488.	2564.	216.3241			
5	0.2484E+05	2360.	.22205+05			
6	0.2233E+05	2508.		.22334+05		

STAGE	FLOW RATE		ENTHALPY	
	LIQUID1	LIQUID2	LIQUID1	LIQUID2
	KMOL/HR		KCAL/MOL	
1	3296.	0.000	-32.220	-32.220

2	0.000	2312.	-64.411	-64.411
3	0.000	2477.	-66.890	-66.890
4	0.000	2488.	-66.899	-66.899
5	0.000	0.2484E+05	-66.901	-66.901
6	0.000	0.2233E+05	-66.903	-66.903

**** MASS FLOW PROFILES ****

STAGE	FLOW RATE		FEED RATE		PRODUCT RATE	
	KG/HR	KG/HR	KG/HR	KG/HR	KG/HR	KG/HR
	LIQUID	VAPOR	LIQUID	VAPOR	MIXED	LIQUID VAPOR
1	0.1653E+06	8345.			8344.8656	
2	0.4871E+05	0.1737E+06		941.5212		
3	0.4492E+05	0.5611E+05	2718.8969			
4	0.4497E+05	0.4961E+05		5093.9148		
5	0.4487E+06	0.4457E+05	.40276+06			
6	0.4032E+06	0.4555E+05			.40317+06	

STAGE	FLOW RATE
	KG/HR
	LIQUID1 LIQUID2
1	0.1653E+06 0.000
2	0.000 0.4871E+05
3	0.000 0.4492E+05
4	0.000 0.4497E+05
5	0.000 0.4487E+06
6	0.000 0.4032E+06

**** MOLE-X-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.36218E-07	0.33302E-08	0.63531E-08	0.59088E-05	0.27775E-06
2	0.81509E-09	0.57886E-10	0.15265E-09	0.62408E-07	0.59440E-09
3	0.84260E-09	0.35291E-10	0.14643E-09	0.31663E-07	0.20424E-09
4	0.80164E-09	0.32964E-10	0.13860E-09	0.29323E-07	0.19077E-09
5	0.80236E-12	0.55494E-13	0.22917E-12	0.63027E-09	0.76400E-12
6	0.70156E-16	0.79598E-17	0.32858E-16	0.11590E-11	0.26181E-15

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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

**** MOLE-X-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.53901E-02	0.66766E-02	0.83839	0.14948	0.23491E-06
2	0.47263E-03	0.46873E-03	0.78332E-01	0.91973	0.67251E-05
3	0.58114E-04	0.40454E-04	0.19308E-02	0.99707	0.19249E-04
4	0.44362E-04	0.22137E-04	0.46988E-03	0.99871	0.50304E-04
5	0.33873E-04	0.17454E-04	0.30043E-03	0.99896	0.13049E-03
6	0.62888E-05	0.42091E-05	0.37216E-04	0.99927	0.13914E-03

**** MOLE-X-PROFILE ****

STAGE	AC-ACRY
1	0.63697E-04
2	0.99306E-03
3	0.87889E-03
4	0.70002E-03
5	0.55658E-03
6	0.54194E-03

**** MOLE-X1-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.36218E-07	0.33302E-08	0.63531E-08	0.59088E-05	0.27775E-06
2	0.81509E-09	0.57886E-10	0.15265E-09	0.62408E-07	0.59440E-09
3	0.84260E-09	0.35291E-10	0.14643E-09	0.31663E-07	0.20424E-09
4	0.80164E-09	0.32964E-10	0.13860E-09	0.29323E-07	0.19077E-09
5	0.80236E-12	0.55494E-13	0.22917E-12	0.63027E-09	0.76400E-12
6	0.70156E-16	0.79598E-17	0.32858E-16	0.11590E-11	0.26181E-15

**** MOLE-X1-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
-------	----------	---------	-------	-----	---------

1	0.53901E-02	0.66766E-02	0.83839	0.14948	0.23491E-06
2	0.47263E-03	0.46873E-03	0.78332E-01	0.91973	0.67251E-05
3	0.58114E-04	0.40454E-04	0.19308E-02	0.99707	0.19249E-04
4	0.44362E-04	0.22137E-04	0.46988E-03	0.99871	0.50304E-04
5	0.33873E-04	0.17454E-04	0.30043E-03	0.99896	0.13049E-03
6	0.62888E-05	0.42091E-05	0.37216E-04	0.99927	0.13914E-03

**** MOLE-X1-PROFILE ****

STAGE AC-ACRY

1	0.63697E-04
2	0.99306E-03
3	0.87889E-03
4	0.70002E-03
5	0.55658E-03
6	0.54194E-03

**** MOLE-X2-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.36218E-07	0.33302E-08	0.63531E-08	0.59088E-05	0.27775E-06
2	0.81509E-09	0.57886E-10	0.15265E-09	0.62408E-07	0.59440E-09
3	0.84260E-09	0.35291E-10	0.14643E-09	0.31663E-07	0.20424E-09
4	0.80164E-09	0.32964E-10	0.13860E-09	0.29323E-07	0.19077E-09
5	0.80236E-12	0.55494E-13	0.22917E-12	0.63027E-09	0.76400E-12
6	0.70156E-16	0.79598E-17	0.32858E-16	0.11590E-11	0.26181E-15

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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

**** MOLE-X2-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.53901E-02	0.66766E-02	0.83839	0.14948	0.23491E-06
2	0.47263E-03	0.46873E-03	0.78332E-01	0.91973	0.67251E-05
3	0.58114E-04	0.40454E-04	0.19308E-02	0.99707	0.19249E-04
4	0.44362E-04	0.22137E-04	0.46988E-03	0.99871	0.50304E-04
5	0.33873E-04	0.17454E-04	0.30043E-03	0.99896	0.13049E-03
6	0.62888E-05	0.42091E-05	0.37216E-04	0.99927	0.13914E-03

**** MOLE-X2-PROFILE ****

STAGE AC-ACRY

1	0.63697E-04
2	0.99306E-03
3	0.87889E-03
4	0.70002E-03
5	0.55658E-03
6	0.54194E-03

**** MOLE-Y-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.14152E-02	0.35250E-04	0.14895E-03	0.24353E-02	0.85385E-04
2	0.67146E-04	0.16748E-05	0.70696E-05	0.12111E-03	0.43137E-05
3	0.94492E-04	0.23537E-05	0.99456E-05	0.16266E-03	0.57016E-05
4	0.90567E-04	0.22559E-05	0.95324E-05	0.15588E-03	0.54644E-05
5	0.90771E-07	0.38132E-08	0.15792E-07	0.33673E-05	0.21980E-07
6	0.79464E-11	0.54958E-12	0.22695E-11	0.62323E-08	0.75648E-11

**** MOLE-Y-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.29693E-01	0.18132E-01	0.83916	0.10889	0.12595E-07
2	0.65426E-02	0.72198E-02	0.83842	0.14755	0.22437E-06
3	0.24155E-02	0.14122E-02	0.12338	0.87157	0.63275E-05
4	0.19388E-02	0.72853E-03	0.32505E-01	0.96370	0.18592E-04
5	0.14907E-02	0.56979E-03	0.21015E-01	0.97618	0.48972E-04
6	0.27950E-03	0.13540E-03	0.26442E-02	0.99620	0.53460E-04

**** MOLE-Y-PROFILE ****

STAGE AC-ACRY

1	0.61020E-06
2	0.60705E-04
3	0.93427E-03

4 0.84892E-03
 5 0.68726E-03
 6 0.68691E-03

**** K-VALUES: V-L1 ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN	FORMA-01
1	3.9075+04	1.0585+04	2.3446+04	412.1402	307.4193	5.5088
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING

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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

**** K-VALUES: V-L1 ****

STAGE	ACETALD	ACROL	H2O	AC-ACET	AC-ACRY
1	2.7157	1.0009	0.7285	5.3615-02	9.5798-03
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING

**** K-VALUES: V-L2 ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN	FORMA-01
1	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
2	8.2378+04	2.8933+04	4.6314+04	1940.6646	7257.1615	13.8429
3	1.1214+05	6.6692+04	6.7920+04	5137.2301	2.7916+04	41.5653
4	1.1298+05	6.8435+04	6.8779+04	5315.8085	2.8643+04	43.7043
5	1.1313+05	6.8713+04	6.8912+04	5342.6119	2.8770+04	44.0077
6	1.1327+05	6.9044+04	6.9070+04	5377.0766	2.8894+04	44.4444

**** K-VALUES: V-L2 ****

STAGE	ACETALD	ACROL	H2O	AC-ACET	AC-ACRY
1	MISSING	MISSING	MISSING	MISSING	MISSING
2	15.4029	10.7035	0.1604	3.3363-02	6.1129-02
3	34.9091	63.9008	0.8741	0.3287	1.0630
4	32.9095	69.1778	0.9649	0.3696	1.2127
5	32.6447	69.9509	0.9772	0.3753	1.2348
6	32.1680	71.0508	0.9969	0.3842	1.2675

**** K-VALUES: L2-L1 ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN	FORMA-01
1	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING

**** K-VALUES: L2-L1 ****

STAGE	ACETALD	ACROL	H2O	AC-ACET	AC-ACRY
1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING

**** MASS-X-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.20228E-07	0.26524E-08	0.40531E-08	0.51846E-05	0.23302E-06
2	0.10838E-08	0.10976E-09	0.23185E-09	0.13037E-06	0.11873E-08
3	0.13013E-08	0.77724E-10	0.25832E-09	0.76822E-07	0.47382E-09
4	0.12425E-08	0.72857E-10	0.24537E-09	0.71400E-07	0.44416E-09
5	0.12443E-11	0.12273E-12	0.40597E-12	0.15356E-08	0.17798E-11
6	0.10887E-15	0.17615E-16	0.58244E-16	0.28257E-11	0.61030E-15

U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

**** MASS-X-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.32267E-02	0.58640E-02	0.93712	0.53688E-01	0.28126E-06
2	0.67361E-03	0.98013E-03	0.20845	0.78648	0.19170E-04
3	0.96200E-04	0.98250E-04	0.59679E-02	0.99028	0.63727E-04
4	0.73698E-04	0.53957E-04	0.14575E-02	0.99546	0.16714E-03
5	0.56307E-04	0.42568E-04	0.93246E-03	0.99631	0.43382E-03
6	0.10460E-04	0.10272E-04	0.11558E-03	0.99724	0.46286E-03

**** MASS-X-PROFILE ****

STAGE	AC-ACRY
1	0.91516E-04
2	0.33969E-02
3	0.34917E-02
4	0.27911E-02
5	0.22205E-02
6	0.21634E-02

**** MASS-X1-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.20228E-07	0.26524E-08	0.40531E-08	0.51846E-05	0.23302E-06
2	0.10838E-08	0.10976E-09	0.23185E-09	0.13037E-06	0.11873E-08
3	0.13013E-08	0.77724E-10	0.25832E-09	0.76822E-07	0.47382E-09
4	0.12425E-08	0.72857E-10	0.24537E-09	0.71400E-07	0.44416E-09
5	0.12443E-11	0.12273E-12	0.40597E-12	0.15356E-08	0.17798E-11
6	0.10887E-15	0.17615E-16	0.58244E-16	0.28257E-11	0.61030E-15

**** MASS-X1-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.32267E-02	0.58640E-02	0.93712	0.53688E-01	0.28126E-06
2	0.67361E-03	0.98013E-03	0.20845	0.78648	0.19170E-04
3	0.96200E-04	0.98250E-04	0.59679E-02	0.99028	0.63727E-04
4	0.73698E-04	0.53957E-04	0.14575E-02	0.99546	0.16714E-03
5	0.56307E-04	0.42568E-04	0.93246E-03	0.99631	0.43382E-03
6	0.10460E-04	0.10272E-04	0.11558E-03	0.99724	0.46286E-03

**** MASS-X1-PROFILE ****

STAGE	AC-ACRY
1	0.91516E-04
2	0.33969E-02
3	0.34917E-02
4	0.27911E-02
5	0.22205E-02
6	0.21634E-02

**** MASS-X2-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.20228E-07	0.26524E-08	0.40531E-08	0.51846E-05	0.23302E-06
2	0.10838E-08	0.10976E-09	0.23185E-09	0.13037E-06	0.11873E-08
3	0.13013E-08	0.77724E-10	0.25832E-09	0.76822E-07	0.47382E-09
4	0.12425E-08	0.72857E-10	0.24537E-09	0.71400E-07	0.44416E-09
5	0.12443E-11	0.12273E-12	0.40597E-12	0.15356E-08	0.17798E-11
6	0.10887E-15	0.17615E-16	0.58244E-16	0.28257E-11	0.61030E-15

U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

**** MASS-X2-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.32267E-02	0.58640E-02	0.93712	0.53688E-01	0.28126E-06
2	0.67361E-03	0.98013E-03	0.20845	0.78648	0.19170E-04
3	0.96200E-04	0.98250E-04	0.59679E-02	0.99028	0.63727E-04
4	0.73698E-04	0.53957E-04	0.14575E-02	0.99546	0.16714E-03

5	0.56307E-04	0.42568E-04	0.93246E-03	0.99631	0.43382E-03
6	0.10460E-04	0.10272E-04	0.11558E-03	0.99724	0.46286E-03

**** MASS-X2-PROFILE ****

STAGE AC-ACRY

1	0.91516E-04
2	0.33969E-02
3	0.34917E-02
4	0.27911E-02
5	0.22205E-02
6	0.21634E-02

**** MASS-Y-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.77955E-03	0.27690E-04	0.93722E-04	0.21074E-02	0.70652E-04
2	0.37477E-04	0.13330E-05	0.45073E-05	0.10620E-03	0.36167E-05
3	0.11594E-03	0.41181E-05	0.13939E-04	0.31353E-03	0.10508E-04
4	0.13114E-03	0.46581E-05	0.15767E-04	0.35459E-03	0.11886E-04
5	0.13463E-06	0.80654E-08	0.26756E-07	0.78464E-05	0.48973E-07
6	0.12257E-10	0.12088E-11	0.39985E-11	0.15102E-07	0.17527E-10

**** MASS-Y-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.17531E-01	0.15707E-01	0.92511	0.38575E-01	0.14873E-07
2	0.39141E-02	0.63370E-02	0.93655	0.52962E-01	0.26846E-06
3	0.31767E-02	0.27248E-02	0.30297	0.68771	0.16643E-04
4	0.30091E-02	0.16589E-02	0.94198E-01	0.89740	0.57712E-04
5	0.23699E-02	0.13290E-02	0.62382E-01	0.93113	0.15571E-03
6	0.46208E-03	0.32841E-03	0.81624E-02	0.98814	0.17676E-03

**** MASS-Y-PROFILE ****

STAGE AC-ACRY

1	0.86467E-06
2	0.87161E-04
3	0.29488E-02
4	0.31622E-02
5	0.26222E-02
6	0.27255E-02

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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

 ***** HYDRAULIC PARAMETERS *****

*** DEFINITIONS ***

MARANGONI INDEX = SIGMA - SIGMATO
 FLOW PARAM = (ML/MV)*SQRT(RHOV/RHOL)
 QR = QV*SQRT(RHOV/(RHOL-RHOV))
 F FACTOR = QV*SQRT(RHOV)

WHERE:

SIGMA IS THE SURFACE TENSION OF LIQUID FROM THE STAGE
 SIGMATO IS THE SURFACE TENSION OF LIQUID TO THE STAGE
 ML IS THE MASS FLOW OF LIQUID FROM THE STAGE
 MV IS THE MASS FLOW OF VAPOR TO THE STAGE
 RHOL IS THE MASS DENSITY OF LIQUID FROM THE STAGE
 RHOV IS THE MASS DENSITY OF VAPOR TO THE STAGE
 QV IS THE VOLUMETRIC FLOW RATE OF VAPOR TO THE STAGE

TEMPERATURE

C

STAGE	LIQUID FROM	VAPOR TO
1	50.745	54.826
2	54.826	95.568

3	96.173	98.923
4	98.923	98.905
5	99.278	99.841
6	99.841	99.841

	MASS FLOW		VOLUME FLOW		MOLECULAR WEIGHT	
	KG/HR		CUM/HR			
STAGE	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO
1	0.16532E+06	0.17367E+06	205.27	91484.	50.157	50.190
2	48708.	57053.	53.012	74532.	21.068	23.042
3	44921.	49605.	48.785	77954.	18.139	19.346
4	44975.	49659.	48.938	78311.	18.074	19.278
5	0.44872E+06	45553.	488.40	76461.	18.063	18.162
6	0.40317E+06	0.0000	439.00	0.0000	18.052	

	DENSITY		VISCOSITY		SURFACE TENSION	
	KG/CUM		CP		DYNE/CM	
STAGE	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO	LIQUID FROM VAPOR TO
1	805.40	1.8984	0.29663	0.86630E-02	26.677	
2	918.81	0.76548	0.48822	0.11995E-01	63.063	
3	920.80	0.63634	0.29154	0.12447E-01	58.860	
4	919.01	0.63413	0.28285	0.12452E-01	58.403	
5	918.76	0.59577	0.28176	0.12577E-01	58.345	
6	918.39	0.28006		58.251		

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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

STAGE	MARANGONI INDEX	FLOW PARAM	QR	REDUCED F-FACTOR
	DYNE/CM	CUM/HR	(GM-L)**.5/MIN	
1	0.46216E-01	4446.7	0.21008E+07	
2	36.386	0.24642E-01	2152.2	0.10868E+07
3	-3.4443	0.23806E-01	2050.0	0.10364E+07
4	-.45693	0.23790E-01	2057.8	0.10393E+07
5	-.58755	0.25084	1947.7	0.98362E+06
6	-.94648E-01	0.0000	0.0000	

***** TRAY SIZING CALCULATIONS *****

*** SECTION 1 ***

STARTING STAGE NUMBER	2
ENDING STAGE NUMBER	5
FLOODING CALCULATION METHOD	GLITSCH6

DESIGN PARAMETERS

PEAK CAPACITY FACTOR	1.00000
SYSTEM FOAMING FACTOR	1.00000
FLOODING FACTOR	0.80000
MINIMUM COLUMN DIAMETER	METER 0.30480
MINIMUM DC AREA/COLUMN AREA	0.100000
HOLE AREA/ACTIVE AREA	0.100000
DOWNCOMER DESIGN BASIS	EQUAL FLOW PATH LENGTH

TRAY SPECIFICATIONS

TRAY TYPE	SIEVE
-----------	-------

NUMBER OF PASSES		2
TRAY SPACING	METER	0.80000

***** SIZING RESULTS @ STAGE WITH MAXIMUM DIAMETER *****

STAGE WITH MAXIMUM DIAMETER		5
COLUMN DIAMETER	METER	3.35718
DC AREA/COLUMN AREA		0.098737
SIDE DOWNCOMER VELOCITY	M/SEC	0.15522
FLOW PATH LENGTH PER PANEL	METER	1.17491
SIDE DOWNCOMER WIDTH	METER	0.35472
SIDE WEIR LENGTH	METER	2.06400
CENTER DOWNCOMER WIDTH	METER	0.29793
CENTER WEIR LENGTH	METER	3.34394
OFF-CENTER DOWNCOMER WIDTH	METER	0.0
OFF-CENTER SHORT WEIR LENGTH	METER	MISSING
OFF-CENTER LONG WEIR LENGTH	METER	MISSING
TRAY CENTER TO OCDC CENTER	METER	0.0
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U-O-S BLOCK SECTION

BLOCK: T-202 MODEL: RADFRAC (CONTINUED)

**** SIZING PROFILES ****

STAGE	DIAMETER	TOTAL AREA	ACTIVE AREA	SIDE DC AREA
		PER PANEL	PER PANEL	
	METER	SQM	SQM	SQM
2	3.3572	8.8520	3.4271	0.43701
3	3.3572	8.8520	3.4271	0.43701
4	3.3572	8.8520	3.4271	0.43701
5	3.3572	8.8520	3.4271	0.43701

**** ADDITIONAL SIZING PROFILES ****

FLOODING		DC BACKUP/		
STAGE FACTOR	PRES. DROP	DC BACKUP	(TSPC+WHT)	
KPA	METER			
2	62.92	0.9261	0.2068	23.87
3	61.73	0.8716	0.1980	22.84
4	62.00	0.8734	0.1985	22.90
5	80.00	1.024	0.3229	37.26

HEIGHT	DC REL	TR LIQ REL	FRA APPR TO
STAGE OVER WEIR	FROTH DENS	FROTH DENS	SYS LIMIT
METER			
2	0.4088E-01	0.6082	0.1807
3	0.3809E-01	0.6082	0.1848
4	0.3820E-01	0.6082	0.1845
5	0.1793	0.6082	0.1897

*** ASSOCIATED UTILITIES ***

UTILITY USAGE: CW (WATER)

CONDENSER	4.7831+06	21.1685
TOTAL:	4.7831+06 KG/HR	21.1685 \$/HR

UTILITY USAGE: LPS (STEAM)

REBOILER	4.7008+04	195.7670	6774.8657
TOTAL:	4.7008+04 KG/HR	195.7670 \$/HR	6774.8657 CO2 KG/HR

BLOCK: T-203 MODEL: RADFRAC

 INLETS - 21 STAGE 5
 OUTLETS - 22 STAGE 1
 23 STAGE 8
 PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	164.090	164.090	0.519626E-15
MASS(KG/HR)	8344.87	8344.86	0.409539E-06
ENTHALPY(KW)	-6072.93	-5880.13	-0.317475E-01

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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	17.5863	KG/HR
PRODUCT STREAMS CO2E	17.5863	KG/HR
NET STREAMS CO2E PRODUCTION	0.378375E-05	KG/HR
UTILITIES CO2E PRODUCTION	506.104	KG/HR
TOTAL CO2E PRODUCTION	506.104	KG/HR

 ***** INPUT DATA *****

**** INPUT PARAMETERS ****

NUMBER OF STAGES	8
ALGORITHM OPTION	3-PHASE
ABSORBER OPTION	NO
INITIALIZATION OPTION	STANDARD
HYDRAULIC PARAMETER CALCULATIONS	NO
INSIDE LOOP CONVERGENCE METHOD	BROYDEN
DESIGN SPECIFICATION METHOD	NESTED
MAXIMUM NO. OF OUTSIDE LOOP ITERATIONS	25
MAXIMUM NO. OF INSIDE LOOP ITERATIONS	10
MAXIMUM NUMBER OF FLASH ITERATIONS	30
FLASH TOLERANCE	0.000100000
OUTSIDE LOOP CONVERGENCE TOLERANCE	0.000100000

**** COL-SPECS ****

MOLAR VAPOR DIST / TOTAL DIST	1.00000
MOLAR REFLUX RATIO	5.00000
DISTILLATE TO FEED RATIO	0.090000

**** L2-STAGES SPECIFICATIONS ****

TWO LIQUID PHASE CALCULATIONS ARE PERFORMED FOR STAGE TO STAGE
 1 8

**** L2-COMPS SPECIFICATIONS ****

KEY COMPONENTS IN THE SECOND LIQUID PHASE	COMPONENT
H2O	

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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

**** PROFILES ****

P-SPEC	STAGE 1 PRES, KPA	101.000
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 ***** RESULTS *****

*** COMPONENT SPLIT FRACTIONS ***

OUTLET STREAMS

	22	23
COMPONENT:		
N2	1.0000	0.0000
ARGON	1.0000	0.0000
O2	1.0000	0.0000
CO2	1.0000	.19140E-09
PROPYLEN	1.0000	.98350E-09
FORMA-01	.99051	.94904E-02
ACETALD	.50000	.50000
ACROL	.99935E-03	.99900
H2O	.97514E-04	.99990
AC-ACET	.55305E-09	1.0000
AC-ACRY	.73229E-14	1.0000

*** SUMMARY OF KEY RESULTS ***

TOP STAGE TEMPERATURE	C	0.61765
BOTTOM STAGE TEMPERATURE	C	51.3461
TOP STAGE LIQUID FLOW	KMOL/HR	136.940
BOTTOM STAGE LIQUID FLOW	KMOL/HR	156.960
TOP STAGE VAPOR FLOW	KMOL/HR	7.12911
BOILUP VAPOR FLOW	KMOL/HR	152.266
MOLAR REFLUX RATIO		19.2086
MOLAR BOILUP RATIO		0.97009
CONDENSER DUTY (W/O SUBCOOL)	KW	-1,051.50
REBOILER DUTY	KW	1,244.30

**** MANIPULATED VARIABLES ****

	BOUNDS	CALCULATED
	LOWER	UPPER
MOLAR REFLUX RATIO	0.50000	20.000
DISTILLATE TO FEED RATIO	0.10000E-01	0.15000
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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

**** DESIGN SPECIFICATIONS ****

NO	SPEC-TYPE	QUALIFIERS	UNIT	SPECIFIED	CALCULATED
		VALUE	VALUE		
1	MOLE-RECOV	STREAMS: 23		0.99900	0.99900
	COMPS:	ACROL			
	BASE-STREAMS:	21			
2	MOLE-RECOV	STREAMS: 22		0.50000	0.50000
	COMPS:	ACETALD			

**** MAXIMUM FINAL RELATIVE ERRORS ****

DEW POINT	0.53407E-07	STAGE= 2	PHASE=L1
BUBBLE POINT	0.15443E-06	STAGE= 2	PHASE=L1
COMPONENT MASS BALANCE	0.66812E-05	STAGE= 4	COMP=N2
ENERGY BALANCE	0.58848E-07	STAGE= 3	

**** PROFILES ****

NOTE REPORTED VALUES FOR STAGE LIQUID AND VAPOR RATES ARE THE FLOWS

FROM THE STAGE INCLUDING ANY SIDE PRODUCT.

STAGE	TEMPERATURE C	PRESSURE KPA	ENTHALPY		HEAT DUTY KW
			LIQUID	VAPOR	
1	0.61765	101.00	-39.056	-31.988	-1051.4981
2	24.161	101.00	-37.155	-32.431	
3	38.267	101.00	-33.619	-30.393	
4	45.475	101.00	-31.602	-26.958	
5	48.600	101.00	-31.023	-24.957	
6	50.046	101.00	-30.803	-24.288	
7	50.839	101.00	-30.672	-23.838	
8	51.346	101.00	-30.759	-23.556	1244.2991

STAGE	FLOW RATE		FEED RATE		PRODUCT RATE		
	KMOL/HR		KMOL/HR		KMOL/HR		
	LIQUID	VAPOR	LIQUID	VAPOR	MIXED	LIQUID	VAPOR
1	136.9	7.129			7.1291		
2	132.0	144.1					
3	130.3	139.2					
4	129.3	137.5	0.7007				
5	309.7	135.7	163.3888				
6	309.6	152.7					
7	309.2	152.6					
8	157.0	152.3		156.9604			
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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

STAGE	FLOW RATE		ENTHALPY	
	KMOL/HR		KCAL/MOL	
	LIQUID1	LIQUID2	LIQUID1	LIQUID2
1	136.9	0.000	-39.056	-39.056
2	132.0	0.000	-37.155	-37.155
3	130.3	0.000	-33.619	-33.619
4	129.3	0.000	-31.602	-31.602
5	309.7	0.000	-31.023	-31.023
6	309.6	0.000	-30.803	-30.803
7	309.2	0.000	-30.672	-30.672
8	157.0	0.000	-30.759	-30.759

**** MASS FLOW PROFILES ****

STAGE	FLOW RATE		FEED RATE		PRODUCT RATE		
	KG/HR		KG/HR		KG/HR		
	LIQUID	VAPOR	LIQUID	VAPOR	MIXED	LIQUID	VAPOR
1	5612.	243.9			243.8842		
2	6195.	5856.					
3	6527.	6439.					
4	6631.	6771.	27.9854				
5	0.1594E+05	6846.	8316.8767				
6	0.1599E+05	7834.					
7	0.1600E+05	7894.					
8	8101.	7898.		8100.9780			

STAGE	FLOW RATE	
	KG/HR	
	LIQUID1	LIQUID2
1	5612.	0.000
2	6195.	0.000
3	6527.	0.000
4	6631.	0.000
5	0.1594E+05	0.000
6	0.1599E+05	0.000
7	0.1600E+05	0.000
8	8101.	0.000

**** MOLE-X-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.15112E-05	0.16523E-06	0.29317E-06	0.58757E-03	0.92646E-04
2	0.53234E-07	0.55858E-08	0.99845E-08	0.16427E-04	0.21206E-05
3	0.46987E-07	0.44282E-08	0.85062E-08	0.95215E-05	0.57926E-06
4	0.44489E-07	0.39364E-08	0.78804E-08	0.79224E-05	0.42531E-06
5	0.35027E-09	0.13014E-09	0.11065E-09	0.42022E-05	0.26935E-06
6	0.18156E-13	0.23390E-13	0.95208E-14	0.20801E-07	0.19036E-08
7	0.93744E-18	0.41685E-17	0.81404E-18	0.10121E-09	0.13086E-10
8	0.48372E-22	0.74625E-21	0.69497E-22	0.48727E-12	0.87790E-13

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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

**** MOLE-X-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.34084	0.48019	0.16697	0.11319E-01	0.27933E-13
2	0.10220	0.40844	0.44781	0.41533E-01	0.12566E-11
3	0.28549E-01	0.21668	0.68538	0.69384E-01	0.28502E-10
4	0.11795E-01	0.94646E-01	0.80600	0.87550E-01	0.46323E-09
5	0.83926E-02	0.40328E-01	0.84873	0.10254	0.69055E-08
6	0.29449E-02	0.27662E-01	0.86446	0.10493	0.69206E-08
7	0.98611E-03	0.17425E-01	0.87412	0.10747	0.71295E-08
8	0.29460E-03	0.94777E-02	0.87640	0.11383	0.13167E-07

**** MOLE-X-PROFILE ****

STAGE	AC-ACRY
1	0.47748E-15
2	0.22541E-12
3	0.36725E-10
4	0.37095E-08
5	0.32524E-06
6	0.32540E-06
7	0.32764E-06
8	0.63792E-06

**** MOLE-X1-PROFILE ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN
1	0.15112E-05	0.16523E-06	0.29317E-06	0.58757E-03	0.92646E-04
2	0.53234E-07	0.55858E-08	0.99845E-08	0.16427E-04	0.21206E-05
3	0.46987E-07	0.44282E-08	0.85062E-08	0.95215E-05	0.57926E-06
4	0.44489E-07	0.39364E-08	0.78804E-08	0.79224E-05	0.42531E-06
5	0.35027E-09	0.13014E-09	0.11065E-09	0.42022E-05	0.26935E-06
6	0.18156E-13	0.23390E-13	0.95208E-14	0.20801E-07	0.19036E-08
7	0.93744E-18	0.41685E-17	0.81404E-18	0.10121E-09	0.13086E-10
8	0.48372E-22	0.74625E-21	0.69497E-22	0.48727E-12	0.87790E-13

**** MOLE-X1-PROFILE ****

STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.34084	0.48019	0.16697	0.11319E-01	0.27933E-13
2	0.10220	0.40844	0.44781	0.41533E-01	0.12566E-11
3	0.28549E-01	0.21668	0.68538	0.69384E-01	0.28502E-10
4	0.11795E-01	0.94646E-01	0.80600	0.87550E-01	0.46323E-09
5	0.83926E-02	0.40328E-01	0.84873	0.10254	0.69055E-08
6	0.29449E-02	0.27662E-01	0.86446	0.10493	0.69206E-08
7	0.98611E-03	0.17425E-01	0.87412	0.10747	0.71295E-08
8	0.29460E-03	0.94777E-02	0.87640	0.11383	0.13167E-07

**** MOLE-X1-PROFILE ****

STAGE	AC-ACRY
1	0.47748E-15
2	0.22541E-12
3	0.36725E-10
4	0.37095E-08
5	0.32524E-06
6	0.32540E-06
7	0.32764E-06
8	0.63792E-06

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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

**** MOLE-X2-PROFILE ****						
STAGE	N2	ARGON	O2	CO2	PROPYLEN	
1	0.15112E-05	0.16523E-06	0.29317E-06	0.58757E-03	0.92646E-04	
2	0.53234E-07	0.55858E-08	0.99845E-08	0.16427E-04	0.21206E-05	
3	0.46987E-07	0.44282E-08	0.85062E-08	0.95215E-05	0.57926E-06	
4	0.44489E-07	0.39364E-08	0.78804E-08	0.79224E-05	0.42531E-06	
5	0.35027E-09	0.13014E-09	0.11065E-09	0.42022E-05	0.26935E-06	
6	0.18156E-13	0.23390E-13	0.95208E-14	0.20801E-07	0.19036E-08	
7	0.93744E-18	0.41685E-17	0.81404E-18	0.10121E-09	0.13086E-10	
8	0.48372E-22	0.74625E-21	0.69497E-22	0.48727E-12	0.87790E-13	

**** MOLE-X2-PROFILE ****						
STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET	
1	0.34084	0.48019	0.16697	0.11319E-01	0.27933E-13	
2	0.10220	0.40844	0.44781	0.41533E-01	0.12566E-11	
3	0.28549E-01	0.21668	0.68538	0.69384E-01	0.28502E-10	
4	0.11795E-01	0.94646E-01	0.80600	0.87550E-01	0.46323E-09	
5	0.83926E-02	0.40328E-01	0.84873	0.10254	0.69055E-08	
6	0.29449E-02	0.27662E-01	0.86446	0.10493	0.69206E-08	
7	0.98611E-03	0.17425E-01	0.87412	0.10747	0.71295E-08	
8	0.29460E-03	0.94777E-02	0.87640	0.11383	0.13167E-07	

**** MOLE-X2-PROFILE ****						
STAGE	AC-ACRY					
1	0.47748E-15					
2	0.22541E-12					
3	0.36725E-10					
4	0.37095E-08					
5	0.32524E-06					
6	0.32540E-06					
7	0.32764E-06					
8	0.63792E-06					

**** MOLE-Y-PROFILE ****						
STAGE	N2	ARGON	O2	CO2	PROPYLEN	
1	0.32573E-01	0.81134E-03	0.34284E-02	0.56052E-01	0.19653E-02	
2	0.16133E-02	0.40306E-04	0.16993E-03	0.33322E-02	0.18531E-03	
3	0.16687E-02	0.41567E-04	0.17563E-03	0.28869E-02	0.10269E-03	
4	0.16893E-02	0.42080E-04	0.17780E-03	0.29159E-02	0.10247E-03	
5	0.13614E-04	0.14439E-05	0.25786E-05	0.16691E-02	0.73660E-04	
6	0.71031E-09	0.26392E-09	0.22438E-09	0.85216E-05	0.54621E-06	
7	0.36827E-13	0.47444E-13	0.19311E-13	0.42192E-07	0.38612E-08	
8	0.19037E-17	0.84647E-17	0.16531E-17	0.20504E-09	0.26484E-10	

**** MOLE-Y-PROFILE ****					
STAGE	FORMA-01	ACETALD	ACROL	H2O	AC-ACET
1	0.67695	0.20867	0.19302E-01	0.24441E-03	0.16033E-15
2	0.35747	0.46675	0.15966	0.10771E-01	0.26559E-13
3	0.13164	0.39821	0.42585	0.39418E-01	0.11922E-11
4	0.62175E-01	0.21626	0.65084	0.65799E-01	0.27024E-10
5	0.46411E-01	0.10103	0.76747	0.83319E-01	0.44050E-09
6	0.16716E-01	0.72039E-01	0.82029	0.90944E-01	0.46949E-09
7	0.56703E-02	0.46362E-01	0.85218	0.95786E-01	0.49723E-09
8	0.16989E-02	0.25618E-01	0.87177	0.10092	0.90595E-09
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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

**** MOLE-Y-PROFILE ****						
STAGE	AC-ACRY					
1	0.10285E-18					
2	0.45386E-15					
3	0.21386E-12					
4	0.34820E-10					
5	0.35292E-08					

6 0.38346E-08
7 0.40178E-08
8 0.77863E-08

**** K-VALUES: V-L1 ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN	FORMA-01
1	2.1554+04	4910.3616	1.1694+04	95.3964	21.2129	1.9861
2	3.0306+04	7215.7001	1.7019+04	202.8504	87.3873	3.4977
3	3.5513+04	9386.8269	2.0648+04	303.1984	177.2709	4.6111
4	3.7971+04	1.0690+04	2.2563+04	368.0527	240.9278	5.2713
5	3.8866+04	1.1095+04	2.3305+04	397.1949	273.4752	5.5300
6	3.9122+04	1.1283+04	2.3567+04	409.6654	286.9289	5.6764
7	3.9285+04	1.1381+04	2.3723+04	416.8682	295.0680	5.7501
8	3.9356+04	1.1343+04	2.3787+04	420.7978	301.6775	5.7670

**** K-VALUES: V-L1 ****

STAGE	ACETALD	ACROL	H2O	AC-ACET	AC-ACRY
1	0.4346	0.1156	2.1594-02	5.7397-03	2.1540-04
2	1.1428	0.3565	0.2593	2.1135-02	2.0135-03
3	1.8378	0.6213	0.5681	4.1829-02	5.8235-03
4	2.2850	0.8075	0.7516	5.8339-02	9.3868-03
5	2.5053	0.9043	0.8125	6.3790-02	1.0851-02
6	2.6042	0.9489	0.8667	6.7840-02	1.1784-02
7	2.6606	0.9749	0.8913	6.9742-02	1.2263-02
8	2.7030	0.9947	0.8865	6.8805-02	1.2206-02

**** K-VALUES: V-L2 ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN	FORMA-01
1	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING

**** K-VALUES: V-L2 ****

STAGE	ACETALD	ACROL	H2O	AC-ACET	AC-ACRY
1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING

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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

**** K-VALUES: L2-L1 ****

STAGE	N2	ARGON	O2	CO2	PROPYLEN	FORMA-01
1	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING

**** K-VALUES: L2-L1 ****

STAGE	ACETALD	ACROL	H2O	AC-ACET	AC-ACRY
1	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING
3	MISSING	MISSING	MISSING	MISSING	MISSING
4	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING

6	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING

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**** MASS-X-PROFILE ****
STAGE  N2      ARGON      O2      CO2      PROPYLEN
1  0.10330E-05  0.16106E-06  0.22891E-06  0.63097E-03  0.95128E-04
2  0.31785E-07  0.47561E-08  0.68098E-08  0.15409E-04  0.19020E-05
3  0.26284E-07  0.35325E-08  0.54353E-08  0.83677E-05  0.48675E-06
4  0.24300E-07  0.30660E-08  0.49165E-08  0.67980E-05  0.34895E-06
5  0.19068E-09  0.10103E-09  0.68802E-10  0.35938E-05  0.22026E-06
6  0.98450E-14  0.18087E-13  0.58970E-14  0.17720E-07  0.15506E-08
7  0.50755E-18  0.32185E-17  0.50344E-18  0.86090E-10  0.10643E-10
8  0.26255E-22  0.57761E-21  0.43088E-22  0.41550E-12  0.71578E-13

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**** MASS-X-PROFILE ****
STAGE  FORMA-01  ACETALD  ACROL  H2O  AC-ACET
1  0.24972  0.51617  0.22841  0.49754E-02  0.40930E-13
2  0.65409E-01  0.38351  0.53511  0.15948E-01  0.16084E-11
3  0.17118E-01  0.19061  0.76730  0.24960E-01  0.34179E-10
4  0.69052E-02  0.81293E-01  0.88104  0.30752E-01  0.54238E-09
5  0.48970E-02  0.34524E-01  0.92468  0.35899E-01  0.80587E-08
6  0.17116E-02  0.23588E-01  0.93811  0.36591E-01  0.80445E-08
7  0.57227E-03  0.14837E-01  0.94717  0.37420E-01  0.82749E-08
8  0.17139E-03  0.80897E-02  0.95201  0.39733E-01  0.15320E-07

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```

**** MASS-X-PROFILE ****
STAGE  AC-ACRY
1  0.83960E-15
2  0.34623E-12
3  0.52848E-10
4  0.52120E-08
5  0.45546E-06
6  0.45389E-06
7  0.45633E-06
8  0.89070E-06

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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

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**** MASS-X1-PROFILE ****
STAGE  N2      ARGON      O2      CO2      PROPYLEN
1  0.10330E-05  0.16106E-06  0.22891E-06  0.63097E-03  0.95128E-04
2  0.31785E-07  0.47561E-08  0.68098E-08  0.15409E-04  0.19020E-05
3  0.26284E-07  0.35325E-08  0.54353E-08  0.83677E-05  0.48675E-06
4  0.24300E-07  0.30660E-08  0.49165E-08  0.67980E-05  0.34895E-06
5  0.19068E-09  0.10103E-09  0.68802E-10  0.35938E-05  0.22026E-06
6  0.98450E-14  0.18087E-13  0.58970E-14  0.17720E-07  0.15506E-08
7  0.50755E-18  0.32185E-17  0.50344E-18  0.86090E-10  0.10643E-10
8  0.26255E-22  0.57761E-21  0.43088E-22  0.41550E-12  0.71578E-13

```

```

**** MASS-X1-PROFILE ****
STAGE  FORMA-01  ACETALD  ACROL  H2O  AC-ACET
1  0.24972  0.51617  0.22841  0.49754E-02  0.40930E-13
2  0.65409E-01  0.38351  0.53511  0.15948E-01  0.16084E-11
3  0.17118E-01  0.19061  0.76730  0.24960E-01  0.34179E-10
4  0.69052E-02  0.81293E-01  0.88104  0.30752E-01  0.54238E-09
5  0.48970E-02  0.34524E-01  0.92468  0.35899E-01  0.80587E-08
6  0.17116E-02  0.23588E-01  0.93811  0.36591E-01  0.80445E-08
7  0.57227E-03  0.14837E-01  0.94717  0.37420E-01  0.82749E-08
8  0.17139E-03  0.80897E-02  0.95201  0.39733E-01  0.15320E-07

```

```

**** MASS-X1-PROFILE ****
STAGE  AC-ACRY
1  0.83960E-15
2  0.34623E-12
3  0.52848E-10
4  0.52120E-08
5  0.45546E-06

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6 0.45389E-06
7 0.45633E-06
8 0.89070E-06

```
**** MASS-X2-PROFILE ****
STAGE  N2      ARGON      O2      CO2      PROPYLEN
 1  0.10330E-05  0.16106E-06  0.22891E-06  0.63097E-03  0.95128E-04
 2  0.31785E-07  0.47561E-08  0.68098E-08  0.15409E-04  0.19020E-05
 3  0.26284E-07  0.35325E-08  0.54353E-08  0.83677E-05  0.48675E-06
 4  0.24300E-07  0.30660E-08  0.49165E-08  0.67980E-05  0.34895E-06
 5  0.19068E-09  0.10103E-09  0.68802E-10  0.35938E-05  0.22026E-06
 6  0.98450E-14  0.18087E-13  0.58970E-14  0.17720E-07  0.15506E-08
 7  0.50755E-18  0.32185E-17  0.50344E-18  0.86090E-10  0.10643E-10
 8  0.26255E-22  0.57761E-21  0.43088E-22  0.41550E-12  0.71578E-13
```

```
**** MASS-X2-PROFILE ****
STAGE  FORMA-01  ACETALD  ACROL  H2O  AC-ACET
 1  0.24972  0.51617  0.22841  0.49754E-02  0.40930E-13
 2  0.65409E-01  0.38351  0.53511  0.15948E-01  0.16084E-11
 3  0.17118E-01  0.19061  0.76730  0.24960E-01  0.34179E-10
 4  0.69052E-02  0.81293E-01  0.88104  0.30752E-01  0.54238E-09
 5  0.48970E-02  0.34524E-01  0.92468  0.35899E-01  0.80587E-08
 6  0.17116E-02  0.23588E-01  0.93811  0.36591E-01  0.80445E-08
 7  0.57227E-03  0.14837E-01  0.94717  0.37420E-01  0.82749E-08
 8  0.17139E-03  0.80897E-02  0.95201  0.39733E-01  0.15320E-07
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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

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**** MASS-X2-PROFILE ****
STAGE  AC-ACRY
 1  0.83960E-15
 2  0.34623E-12
 3  0.52848E-10
 4  0.52120E-08
 5  0.45546E-06
 6  0.45389E-06
 7  0.45633E-06
 8  0.89070E-06
```

```
**** MASS-Y-PROFILE ****
STAGE  N2      ARGON      O2      CO2      PROPYLEN
 1  0.26674E-01  0.94744E-03  0.32069E-02  0.72109E-01  0.24175E-02
 2  0.11119E-02  0.39612E-04  0.13377E-03  0.36078E-02  0.19185E-03
 3  0.10104E-02  0.35891E-04  0.12147E-03  0.27461E-02  0.93397E-04
 4  0.96077E-03  0.34129E-04  0.11551E-03  0.26053E-02  0.87543E-04
 5  0.75592E-05  0.11434E-05  0.16355E-05  0.14560E-02  0.61440E-04
 6  0.38786E-09  0.20550E-09  0.13995E-09  0.73101E-05  0.44802E-06
 7  0.19949E-13  0.36648E-13  0.11949E-13  0.35905E-07  0.31418E-08
 8  0.10281E-17  0.65189E-17  0.10198E-17  0.17396E-09  0.21485E-10
```

```
**** MASS-Y-PROFILE ****
STAGE  FORMA-01  ACETALD  ACROL  H2O  AC-ACET
 1  0.59417  0.26871  0.31633E-01  0.12871E-03  0.28144E-15
 2  0.26406  0.50586  0.22022  0.47736E-02  0.39237E-13
 3  0.85437E-01  0.37916  0.51604  0.15349E-01  0.15475E-11
 4  0.37902E-01  0.19342  0.74081  0.24066E-01  0.32948E-10
 5  0.27622E-01  0.88224E-01  0.85287  0.29752E-01  0.52435E-09
 6  0.97836E-02  0.61859E-01  0.89641  0.31935E-01  0.54956E-09
 7  0.32922E-02  0.39493E-01  0.92385  0.33368E-01  0.57739E-09
 8  0.98343E-03  0.21756E-01  0.94221  0.35048E-01  0.10488E-08
```

```
**** MASS-Y-PROFILE ****
STAGE  AC-ACRY
 1  0.21666E-18
 2  0.80464E-15
 3  0.33312E-12
 4  0.50944E-10
 5  0.50412E-08
```

6 0.53862E-08
7 0.55986E-08
8 0.10817E-07

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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

***** HYDRAULIC PARAMETERS *****

*** DEFINITIONS ***

MARANGONI INDEX = SIGMA - SIGMATO
FLOW PARAM = (ML/MV)*SQRT(RHOV/RHOL)
QR = QV*SQRT(RHOV/(RHOL-RHOV))
F FACTOR = QV*SQRT(RHOV)
WHERE:
SIGMA IS THE SURFACE TENSION OF LIQUID FROM THE STAGE
SIGMATO IS THE SURFACE TENSION OF LIQUID TO THE STAGE
ML IS THE MASS FLOW OF LIQUID FROM THE STAGE
MV IS THE MASS FLOW OF VAPOR TO THE STAGE
RHOL IS THE MASS DENSITY OF LIQUID FROM THE STAGE
RHOV IS THE MASS DENSITY OF VAPOR TO THE STAGE
QV IS THE VOLUMETRIC FLOW RATE OF VAPOR TO THE STAGE

TEMPERATURE C

STAGE	LIQUID FROM	VAPOR TO
1	0.61765	24.161
2	24.161	38.267
3	38.267	45.475
4	45.475	48.503
5	48.600	50.046
6	50.046	50.839
7	50.839	51.346
8	51.346	51.346

STAGE	MASS FLOW		VOLUME FLOW		MOLECULAR WEIGHT	
	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO
1	5612.2	5856.1	6.8063	3456.7	40.983	40.648
2	6194.9	6438.8	7.6330	3494.0	46.917	46.266
3	6527.2	6771.1	8.0853	3529.0	50.078	49.255
4	6630.5	6874.4	8.2327	3534.1	51.289	50.396
5	15935.	7834.1	19.802	3973.7	51.460	51.303
6	15995.	7893.5	19.903	3981.2	51.663	51.715
7	15999.	7898.4	19.919	3977.6	51.740	51.873
8	8101.0	0.0000	10.086	0.0000	51.612	

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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

STAGE	DENSITY		VISCOSITY		SURFACE TENSION	
	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO
1	824.55	1.6941	0.27423	0.92403E-02	23.684	
2	811.60	1.8428	0.27338	0.88356E-02	23.554	
3	807.30	1.9187	0.28101	0.86592E-02	23.873	
4	805.39	1.9451	0.28484	0.86035E-02	24.162	
5	804.72	1.9715	0.28744	0.85028E-02	24.611	
6	803.62	1.9827	0.28687	0.84745E-02	24.590	

7	803.22	1.9857	0.28701	0.84655E-02	24.640
8	803.20		0.28815		24.900

	MARANGONI INDEX	FLOW PARAM	QR	REDUCED F-FACTOR
STAGE	DYNE/CM	CUM/HR	(GM-L)**.5/MIN	
1	0.43440E-01	156.85	74987.	
2	-1.12979	0.45846E-01	166.68	79052.
3	0.31831	0.46996E-01	172.25	81471.
4	0.28890	0.47401E-01	173.89	82150.
5	-2.1741	0.10068	196.93	92991.
6	-2.0603E-01	0.10065	197.99	93431.
7	0.50083E-01	0.10072	198.02	93418.
8	0.26013	0.0000	0.0000	

 ***** TRAY SIZING CALCULATIONS *****

 *** SECTION 1 ***

STARTING STAGE NUMBER 2
 ENDING STAGE NUMBER 7
 FLOODING CALCULATION METHOD GLITSCH6

DESIGN PARAMETERS

 PEAK CAPACITY FACTOR 1.00000
 SYSTEM FOAMING FACTOR 1.00000
 FLOODING FACTOR 0.80000
 MINIMUM COLUMN DIAMETER METER 0.30480
 MINIMUM DC AREA/COLUMN AREA 0.100000
 HOLE AREA/ACTIVE AREA 0.100000
 DOWNCOMER DESIGN BASIS EQUAL FLOW PATH LENGTH
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U-O-S BLOCK SECTION

BLOCK: T-203 MODEL: RADFRAC (CONTINUED)

TRAY SPECIFICATIONS

 TRAY TYPE SIEVE
 NUMBER OF PASSES 1
 TRAY SPACING METER 0.60960

***** SIZING RESULTS @ STAGE WITH MAXIMUM DIAMETER *****

STAGE WITH MAXIMUM DIAMETER	7
COLUMN DIAMETER METER	0.92538
DC AREA/COLUMN AREA	0.100000
DOWNCOMER VELOCITY M/SEC	0.082268
FLOW PATH LENGTH PER PANEL METER	0.63578
SIDE DOWNCOMER WIDTH METER	0.14480
SIDE WEIR LENGTH METER	0.67239
CENTER DOWNCOMER WIDTH METER	0.0
CENTER WEIR LENGTH METER	MISSING
OFF-CENTER DOWNCOMER WIDTH METER	0.0
OFF-CENTER SHORT WEIR LENGTH METER	MISSING
OFF-CENTER LONG WEIR LENGTH METER	MISSING
TRAY CENTER TO OCDC CENTER METER	0.0

**** SIZING PROFILES ****

STAGE	DIAMETER METER	TOTAL AREA SQM	ACTIVE AREA SQM	SIDE DC AREA SQM
2	0.92538	0.67256	0.53805	0.67256E-01
3	0.92538	0.67256	0.53805	0.67256E-01
4	0.92538	0.67256	0.53805	0.67256E-01
5	0.92538	0.67256	0.53805	0.67256E-01
6	0.92538	0.67256	0.53805	0.67256E-01
7	0.92538	0.67256	0.53805	0.67256E-01

**** ADDITIONAL SIZING PROFILES ****

FLOODING STAGE FACTOR	KPA	DC BACKUP/ PRES. DROP METER	DC BACKUP (TSPC+WHT)
2	64.39	0.7570	0.1892 28.64
3	66.61	0.7884	0.1961 29.69
4	67.27	0.7975	0.1982 30.02
5	79.55	0.9898	0.2538 38.43
6	79.99	0.9963	0.2554 38.68
7	80.00	0.9961	0.2555 38.69

HEIGHT STAGE OVER WEIR METER	DC REL	TR LIQ REL	FRA APPR TO FROTH DENS	SYS LIMIT FROTH DENS
2	0.4966E-01	0.6077	0.1874	43.16
3	0.5267E-01	0.6077	0.1846	44.43
4	0.5364E-01	0.6076	0.1839	44.71
5	0.1327	0.6076	0.1744	50.61
6	0.1333	0.6076	0.1741	50.88
7	0.1334	0.6076	0.1741	50.86

*** ASSOCIATED UTILITIES ***

UTILITY USAGE: REFRI-1 (REFRIGERANT)

CONDENSER	9.4635+05	10.3720	211.5654
TOTAL:	9.4635+05 KG/HR	10.3720 \$/HR	211.5654 CO2 KG/HR

UTILITY USAGE: LPS (STEAM)

REBOILER	2043.6699	8.5110	294.5385
TOTAL:	2043.6699 KG/HR	8.5110 \$/HR	294.5385 CO2 KG/HR

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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC

INLETS - L STAGE 6
OUTLETS - 25 STAGE 1
26 STAGE 9
S4 STAGE 1

PROPERTY OPTION SET: UNIQ-RK UNIQUAC / REDLICH-KWONG
HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	156.960	156.960	-0.181076E-15
MASS(KG/HR)	8100.98	8100.98	0.224539E-15
ENTHALPY(KW)	-5311.40	-5303.48	-0.149083E-02

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.336593E-08 KG/HR
PRODUCT STREAMS CO2E	0.395558E-05 KG/HR
NET STREAMS CO2E PRODUCTION	0.395221E-05 KG/HR
UTILITIES CO2E PRODUCTION	672.811 KG/HR

U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

 **** INPUT DATA ****

**** INPUT PARAMETERS ****

NUMBER OF STAGES	9
ALGORITHM OPTION	3-PHASE
ABSORBER OPTION	NO
INITIALIZATION OPTION	STANDARD
HYDRAULIC PARAMETER CALCULATIONS	NO
INSIDE LOOP CONVERGENCE METHOD	BROYDEN
DESIGN SPECIFICATION METHOD	NESTED
MAXIMUM NO. OF OUTSIDE LOOP ITERATIONS	25
MAXIMUM NO. OF INSIDE LOOP ITERATIONS	10
MAXIMUM NUMBER OF FLASH ITERATIONS	30
FLASH TOLERANCE	0.000100000
OUTSIDE LOOP CONVERGENCE TOLERANCE	0.000100000

**** COL-SPECS ****

MOLAR VAPOR DIST / TOTAL DIST	0.0
MOLAR REFLUX RATIO	8.00000
BOTTOMS TO FEED RATIO	0.50000

**** L2-STAGES SPECIFICATIONS ****

TWO LIQUID PHASE CALCULATIONS ARE PERFORMED FOR STAGE TO STAGE
 1 9

**** L2-COMPS SPECIFICATIONS ****

KEY COMPONENTS IN THE SECOND LIQUID PHASE	COMPONENT
H2O	

**** PROFILES ****

P-SPEC	STAGE 1 PRES, KPA	575.000
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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

 **** RESULTS ****

*** COMPONENT SPLIT FRACTIONS ***

OUTLET STREAMS

	25	26
COMPONENT:		
CO2	1.0000	.28463E-09
PROPYLEN	1.0000	.18867E-08
FORMA-01	.99679	.32121E-02
ACETALD	.83245	.16755
ACROL	.44089	.55911
H2O	.92611	.73886E-01
AC-ACET	.21027E-04	.99998

AC-ACRY .58915E-07 1.0000

*** SUMMARY OF KEY RESULTS ***

TOP STAGE TEMPERATURE	C	110.675
BOTTOM STAGE TEMPERATURE	C	114.383
TOP STAGE LIQUID FLOW	KMOL/HR	374.136
BOTTOM STAGE LIQUID FLOW	KMOL/HR	78.4802
TOP STAGE VAPOR FLOW	KMOL/HR	0.0
BOILUP VAPOR FLOW	KMOL/HR	394.510
MOLAR REFLUX RATIO		3.76726
MOLAR BOILUP RATIO		5.02687
CONDENSER DUTY (W/O SUBCOOL)	KW	-2,834.42
REBOILER DUTY	KW	2,842.34

**** MANIPULATED VARIABLES ****

	BOUNDS	CALCULATED	
	LOWER	UPPER	VALUE
MOLAR REFLUX RATIO	0.50000	20.000	3.7673

**** DESIGN SPECIFICATIONS ****

NO	SPEC-TYPE	QUALIFIERS	UNIT	SPECIFIED	CALCULATED
		VALUE	VALUE		
1	MOLE-FRAC	STREAMS: 26	0.98000	0.98000	
	COMPS:	ACROL			
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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

**** MAXIMUM FINAL RELATIVE ERRORS ****

DEW POINT	0.44190E-09	STAGE= 9	PHASE=L1
BUBBLE POINT	0.23596E-07	STAGE= 6	PHASE=L1
COMPONENT MASS BALANCE	0.74163E-10	STAGE= 6	COMP=FORMA-01
ENERGY BALANCE	0.28842E-07	STAGE= 4	

**** PROFILES ****

NOTE REPORTED VALUES FOR STAGE LIQUID AND VAPOR RATES ARE THE FLOWS FROM THE STAGE INCLUDING ANY SIDE PRODUCT.

	STAGE	TEMPERATURE	ENTHALPY		
		C	PRESSURE	KCAL/MOL	HEAT DUTY
		KPA	LIQUID	VAPOR	KW
1	110.67	575.00	-33.210	-26.769	-2834.4216
2	110.71	575.00	-32.978	-26.696	
5	110.97	575.00	-30.175	-25.467	
6	111.40	575.00	-28.591	-24.401	
7	112.16	575.00	-27.095	-22.995	
8	113.29	575.00	-25.772	-21.266	
9	114.38	575.00	-24.896	-19.752	2842.3400

	STAGE	FLOW RATE		FEED RATE		PRODUCT RATE
		KMOL/HR		KMOL/HR		KMOL/HR
		LIQUID	VAPOR	LIQUID	VAPOR	MIXED
						LIQUID
						VAPOR
1	374.1	0.000			78.4802	
2	296.5	374.1				
5	302.4	378.1				
6	463.4	380.8	156.9604			
7	468.2	384.9				
8	473.0	389.7				
9	78.48	394.5			78.4802	

STAGE	FLOW RATE		ENTHALPY	
	KMOL/HR		KCAL/MOL	
	LIQUID1	LIQUID2	LIQUID1	LIQUID2
1	374.1	0.000	-33.210	-33.210
2	296.5	0.000	-32.978	-32.978
5	302.4	0.000	-30.175	-30.175
6	463.4	0.000	-28.591	-28.591
7	468.2	0.000	-27.095	-27.095
8	473.0	0.000	-25.772	-25.772
9	78.48	0.000	-24.896	-24.896

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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

**** MASS FLOW PROFILES ****

STAGE	FLOW RATE		FEED RATE		PRODUCT RATE	
	KG/HR		KG/HR		KG/HR	
	LIQUID	VAPOR	LIQUID	VAPOR	MIXED	LIQUID VAPOR
1	0.1790E+05	0.000			3754.2751	
2	0.1425E+05	0.1790E+05				
5	0.1531E+05	0.1854E+05				
6	0.2413E+05	0.1906E+05	8100.9779			
7	0.2501E+05	0.1978E+05				
8	0.2583E+05	0.2067E+05				
9	4347.	0.2149E+05			4346.7028	

STAGE	FLOW RATE	
	KG/HR	
	LIQUID1	LIQUID2
1	0.1790E+05	0.000
2	0.1425E+05	0.000
5	0.1531E+05	0.000
6	0.2413E+05	0.000
7	0.2501E+05	0.000
8	0.2583E+05	0.000
9	4347.	0.000

**** MOLE-X-PROFILE ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL
1	0.97453E-12	0.17558E-12	0.58730E-03	0.15779E-01	0.77280
2	0.54274E-14	0.13275E-14	0.19454E-03	0.16180E-01	0.77841
5	0.11305E-14	0.29707E-15	0.55125E-04	0.13353E-01	0.84801
6	0.11092E-14	0.30368E-15	0.51095E-04	0.10757E-01	0.88777
7	0.71907E-17	0.31096E-17	0.18185E-04	0.83637E-02	0.92508
8	0.45257E-19	0.32110E-19	0.60920E-05	0.55494E-02	0.95812
9	0.27739E-21	0.33127E-21	0.18926E-05	0.31760E-02	0.98000

**** MOLE-X-PROFILE ****

STAGE	H2O	AC-ACET	AC-ACRY
1	0.21084	0.55372E-12	0.75165E-13
2	0.20521	0.50492E-11	0.20873E-11
5	0.13859	0.12481E-08	0.15494E-07
6	0.10142	0.56841E-08	0.22894E-06
7	0.66534E-01	0.68701E-08	0.23517E-06
8	0.36320E-01	0.11154E-07	0.31386E-06
9	0.16821E-01	0.26333E-07	0.12758E-05

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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

**** MOLE-X1-PROFILE ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL
1	0.97453E-12	0.17558E-12	0.58730E-03	0.15779E-01	0.77280
2	0.54274E-14	0.13275E-14	0.19454E-03	0.16180E-01	0.77841
5	0.11305E-14	0.29707E-15	0.55125E-04	0.13353E-01	0.84801
6	0.11092E-14	0.30368E-15	0.51095E-04	0.10757E-01	0.88777

7	0.71907E-17	0.31096E-17	0.18185E-04	0.83637E-02	0.92508
8	0.45257E-19	0.32110E-19	0.60920E-05	0.55494E-02	0.95812
9	0.27739E-21	0.33127E-21	0.18926E-05	0.31760E-02	0.98000

**** MOLE-X1-PROFILE ****

STAGE	H2O	AC-ACET	AC-ACRY
1	0.21084	0.55372E-12	0.75165E-13
2	0.20521	0.50492E-11	0.20873E-11
5	0.13859	0.12481E-08	0.15494E-07
6	0.10142	0.56841E-08	0.22894E-06
7	0.66534E-01	0.68701E-08	0.23517E-06
8	0.36320E-01	0.11154E-07	0.31386E-06
9	0.16821E-01	0.26333E-07	0.12758E-05

**** MOLE-X2-PROFILE ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL
1	0.97453E-12	0.17558E-12	0.58730E-03	0.15779E-01	0.77280
2	0.54274E-14	0.13275E-14	0.19454E-03	0.16180E-01	0.77841
5	0.11305E-14	0.29707E-15	0.55125E-04	0.13353E-01	0.84801
6	0.11092E-14	0.30368E-15	0.51095E-04	0.10757E-01	0.88777
7	0.71907E-17	0.31096E-17	0.18185E-04	0.83637E-02	0.92508
8	0.45257E-19	0.32110E-19	0.60920E-05	0.55494E-02	0.95812
9	0.27739E-21	0.33127E-21	0.18926E-05	0.31760E-02	0.98000

**** MOLE-X2-PROFILE ****

STAGE	H2O	AC-ACET	AC-ACRY
1	0.21084	0.55372E-12	0.75165E-13
2	0.20521	0.50492E-11	0.20873E-11
5	0.13859	0.12481E-08	0.15494E-07
6	0.10142	0.56841E-08	0.22894E-06
7	0.66534E-01	0.68701E-08	0.23517E-06
8	0.36320E-01	0.11154E-07	0.31386E-06
9	0.16821E-01	0.26333E-07	0.12758E-05

**** MOLE-Y-PROFILE ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL
1	0.17505E-09	0.23374E-10	0.17680E-02	0.15192E-01	0.77025
2	0.97453E-12	0.17558E-12	0.58730E-03	0.15779E-01	0.77280
5	0.20316E-12	0.36669E-13	0.17226E-03	0.15328E-01	0.80473
6	0.20172E-12	0.36417E-13	0.16479E-03	0.13853E-01	0.83251
7	0.13354E-14	0.36561E-15	0.61127E-04	0.12302E-01	0.86897
8	0.86388E-17	0.37358E-17	0.21467E-04	0.94085E-02	0.91402
9	0.54205E-19	0.38432E-19	0.69274E-05	0.60216E-02	0.95377

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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

**** MOLE-Y-PROFILE ****

STAGE	H2O	AC-ACET	AC-ACRY
1	0.21279	0.59323E-13	0.26557E-14
2	0.21084	0.55372E-12	0.75165E-13
5	0.17977	0.18040E-09	0.70095E-09
6	0.15347	0.99101E-09	0.12301E-07
7	0.11867	0.14735E-08	0.15470E-07
8	0.76547E-01	0.29502E-08	0.25583E-07
9	0.40198E-01	0.81339E-08	0.12250E-06

**** K-VALUES: V-L1 ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL	H2O
1	179.6295	133.1226	3.0104	0.9628	0.9967	1.0093
2	179.5588	132.2674	3.0190	0.9752	0.9928	1.0274
5	179.7041	123.4337	3.1249	1.1479	0.9490	1.2971
6	181.8507	119.9187	3.2252	1.2879	0.9377	1.5133
7	185.7175	117.5736	3.3613	1.4709	0.9393	1.7836
8	190.8819	116.3431	3.5238	1.6954	0.9540	2.1076
9	195.4148	116.0144	3.6603	1.8960	0.9732	2.3898

**** K-VALUES: V-L1 ****

STAGE	AC-ACET	AC-ACRY
-------	---------	---------

1	0.1071	3.5332-02
2	0.1097	3.6011-02
5	0.1445	4.5239-02
6	0.1743	5.3731-02
7	0.2145	6.5783-02
8	0.2645	8.1510-02
9	0.3089	9.6013-02

**** K-VALUES: V-L2 ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL	H2O
1	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING

**** K-VALUES: V-L2 ****

STAGE	AC-ACET	AC-ACRY
1	MISSING	MISSING
2	MISSING	MISSING
5	MISSING	MISSING
6	MISSING	MISSING
7	MISSING	MISSING
8	MISSING	MISSING
9	MISSING	MISSING

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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

**** K-VALUES: L2-L1 ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL	H2O
1	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
2	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
5	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
6	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
7	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
8	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING
9	MISSING	MISSING	MISSING	MISSING	MISSING	MISSING

**** K-VALUES: L2-L1 ****

STAGE	AC-ACET	AC-ACRY
1	MISSING	MISSING
2	MISSING	MISSING
5	MISSING	MISSING
6	MISSING	MISSING
7	MISSING	MISSING
8	MISSING	MISSING
9	MISSING	MISSING

**** MASS-X-PROFILE ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL
1	0.89656E-12	0.15445E-12	0.36864E-03	0.14531E-01	0.90570
2	0.49703E-14	0.11624E-14	0.12155E-03	0.14832E-01	0.90812
5	0.98270E-15	0.24691E-15	0.32693E-04	0.11619E-01	0.93904
6	0.93745E-15	0.24540E-15	0.29461E-04	0.90996E-02	0.95579
7	0.59227E-17	0.24490E-17	0.10219E-04	0.68957E-02	0.97066
8	0.36469E-19	0.24741E-19	0.33493E-05	0.44762E-02	0.98354
9	0.22041E-21	0.25169E-21	0.10260E-05	0.25261E-02	0.99200

**** MASS-X-PROFILE ****

STAGE	H2O	AC-ACET	AC-ACRY
1	0.79400E-01	0.69512E-12	0.11323E-12
2	0.76928E-01	0.63095E-11	0.31300E-11
5	0.49313E-01	0.14804E-08	0.22054E-07
6	0.35086E-01	0.65549E-08	0.31682E-06
7	0.22433E-01	0.77213E-08	0.31718E-06
8	0.11980E-01	0.12264E-07	0.41413E-06

9 0.54713E-02 0.28552E-07 0.16600E-05

**** MASS-X1-PROFILE ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL
1	0.89656E-12	0.15445E-12	0.36864E-03	0.14531E-01	0.90570
2	0.49703E-14	0.11624E-14	0.12155E-03	0.14832E-01	0.90812
5	0.98270E-15	0.24691E-15	0.32693E-04	0.11619E-01	0.93904
6	0.93745E-15	0.24540E-15	0.29461E-04	0.90996E-02	0.95579
7	0.59227E-17	0.24490E-17	0.10219E-04	0.68957E-02	0.97066
8	0.36469E-19	0.24741E-19	0.33493E-05	0.44762E-02	0.98354
9	0.22041E-21	0.25169E-21	0.10260E-05	0.25261E-02	0.99200

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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

**** MASS-X1-PROFILE ****

STAGE	H2O	AC-ACET	AC-ACRY
1	0.79400E-01	0.69512E-12	0.11323E-12
2	0.76928E-01	0.63095E-11	0.31300E-11
5	0.49313E-01	0.14804E-08	0.22054E-07
6	0.35086E-01	0.65549E-08	0.31682E-06
7	0.22433E-01	0.77213E-08	0.31718E-06
8	0.11980E-01	0.12264E-07	0.41413E-06
9	0.54713E-02	0.28552E-07	0.16600E-05

**** MASS-X2-PROFILE ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL
1	0.89656E-12	0.15445E-12	0.36864E-03	0.14531E-01	0.90570
2	0.49703E-14	0.11624E-14	0.12155E-03	0.14832E-01	0.90812
5	0.98270E-15	0.24691E-15	0.32693E-04	0.11619E-01	0.93904
6	0.93745E-15	0.24540E-15	0.29461E-04	0.90996E-02	0.95579
7	0.59227E-17	0.24490E-17	0.10219E-04	0.68957E-02	0.97066
8	0.36469E-19	0.24741E-19	0.33493E-05	0.44762E-02	0.98354
9	0.22041E-21	0.25169E-21	0.10260E-05	0.25261E-02	0.99200

**** MASS-X2-PROFILE ****

STAGE	H2O	AC-ACET	AC-ACRY
1	0.79400E-01	0.69512E-12	0.11323E-12
2	0.76928E-01	0.63095E-11	0.31300E-11
5	0.49313E-01	0.14804E-08	0.22054E-07
6	0.35086E-01	0.65549E-08	0.31682E-06
7	0.22433E-01	0.77213E-08	0.31718E-06
8	0.11980E-01	0.12264E-07	0.41413E-06
9	0.54713E-02	0.28552E-07	0.16600E-05

**** MASS-Y-PROFILE ****

STAGE	CO2	PROPYLEN	FORMA-01	ACETALD	ACROL
1	0.16138E-09	0.20603E-10	0.11120E-02	0.14019E-01	0.90457
2	0.89656E-12	0.15445E-12	0.36864E-03	0.14531E-01	0.90570
5	0.18233E-12	0.31468E-13	0.10548E-03	0.13770E-01	0.92008
6	0.17736E-12	0.30616E-13	0.98854E-04	0.12192E-01	0.93247
7	0.11434E-14	0.29932E-15	0.35709E-04	0.10544E-01	0.94783
8	0.71683E-17	0.29640E-17	0.12153E-04	0.78147E-02	0.96617
9	0.43802E-19	0.29695E-19	0.38193E-05	0.48707E-02	0.98183

**** MASS-Y-PROFILE ****

STAGE	H2O	AC-ACET	AC-ACRY
1	0.80302E-01	0.74624E-13	0.40089E-14
2	0.79400E-01	0.69512E-12	0.11323E-12
5	0.66044E-01	0.22093E-09	0.10301E-08
6	0.55238E-01	0.11890E-08	0.17711E-07
7	0.41593E-01	0.17216E-08	0.21690E-07
8	0.26000E-01	0.33403E-08	0.34760E-07
9	0.13297E-01	0.89688E-08	0.16209E-06

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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

 ***** HYDRAULIC PARAMETERS *****

*** DEFINITIONS ***

MARANGONI INDEX = SIGMA - SIGMATO
 FLOW PARAM = (ML/MV)*SQRT(RHOV/RHOL)
 QR = QV*SQRT(RHOV/(RHOL-RHOV))
 F FACTOR = QV*SQRT(RHOV)
 WHERE:
 SIGMA IS THE SURFACE TENSION OF LIQUID FROM THE STAGE
 SIGMATO IS THE SURFACE TENSION OF LIQUID TO THE STAGE
 ML IS THE MASS FLOW OF LIQUID FROM THE STAGE
 MV IS THE MASS FLOW OF VAPOR TO THE STAGE
 RHOL IS THE MASS DENSITY OF LIQUID FROM THE STAGE
 RHOV IS THE MASS DENSITY OF VAPOR TO THE STAGE
 QV IS THE VOLUMETRIC FLOW RATE OF VAPOR TO THE STAGE

TEMPERATURE
 C

STAGE	LIQUID FROM	VAPOR TO
1	110.67	110.71
2	110.71	110.73
5	110.97	111.40
6	111.40	112.16
7	112.16	113.29
8	113.29	114.38
9	114.38	114.38

STAGE	MASS FLOW		VOLUME FLOW		MOLECULAR WEIGHT	
	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO
1	17898.	17898.	24.793	1916.1	47.837	47.837
2	14247.	18001.	19.746	1919.8	48.057	48.011
5	15309.	19063.	21.316	1947.0	50.629	50.054
6	24129.	19782.	33.695	1967.6	52.075	51.400
7	25014.	20668.	35.048	1993.4	53.432	53.038
8	25833.	21486.	36.331	2019.9	54.615	54.462
9	4346.7	0.0000	6.1328	0.0000	55.386	

STAGE	DENSITY		VISCOSITY		SURFACE TENSION	
	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO
1	721.88	9.3405	0.19344	0.10633E-01	21.035	
2	721.52	9.3767	0.19307	0.10622E-01	20.781	
5	718.17	9.7907	0.18898	0.10506E-01	17.795	
6	716.11	10.054	0.18650	0.10440E-01	16.095	
7	713.72	10.368	0.18386	0.10368E-01	14.456	
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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

STAGE	DENSITY		VISCOSITY		SURFACE TENSION	
	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO	LIQUID FROM	VAPOR TO
8	711.04	10.637	0.18122	0.10310E-01	12.984	
9	708.77	0.17925		11.993		

STAGE	MARANGONI INDEX	FLOW PARAM	QR	REDUCED F-FACTOR
	DYNE/CM	CUM/HR	(GM-L)**.5/MIN	
1	0.11375	219.38	97602.	

2	-25389	0.90223E-01	220.29	97978.
5	-1.4871	0.93765E-01	228.90	0.10154E+06
6	-1.3243	0.14452	234.80	0.10398E+06
7	-1.6387	0.14587	242.02	0.10698E+06
8	-1.4720	0.14705	248.93	0.10980E+06
9	-99120		0.0000	0.0000

 ***** TRAY SIZING CALCULATIONS *****

 *** SECTION 1 ***

STARTING STAGE NUMBER 2
 ENDING STAGE NUMBER 8
 FLOODING CALCULATION METHOD GLITSCH6

DESIGN PARAMETERS

 PEAK CAPACITY FACTOR 1.00000
 SYSTEM FOAMING FACTOR 1.00000
 FLOODING FACTOR 0.80000
 MINIMUM COLUMN DIAMETER METER 0.30480
 MINIMUM DC AREA/COLUMN AREA 0.100000
 HOLE AREA/ACTIVE AREA 0.100000
 DOWNCOMER DESIGN BASIS EQUAL FLOW PATH LENGTH

TRAY SPECIFICATIONS

 TRAY TYPE SIEVE
 NUMBER OF PASSES 1
 TRAY SPACING METER 0.60960
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U-O-S BLOCK SECTION

BLOCK: T-204 MODEL: RADFRAC (CONTINUED)

***** SIZING RESULTS @ STAGE WITH MAXIMUM DIAMETER *****

STAGE WITH MAXIMUM DIAMETER	8
COLUMN DIAMETER METER	1.07478
DC AREA/COLUMN AREA	0.100000
DOWNCOMER VELOCITY M/SEC	0.11124
FLOW PATH LENGTH PER PANEL METER	0.73842
SIDE DOWNCOMER WIDTH METER	0.16818
SIDE WEIR LENGTH METER	0.78095
CENTER DOWNCOMER WIDTH METER	0.0
CENTER WEIR LENGTH METER	MISSING
OFF-CENTER DOWNCOMER WIDTH METER	0.0
OFF-CENTER SHORT WEIR LENGTH METER	MISSING
OFF-CENTER LONG WEIR LENGTH METER	MISSING
TRAY CENTER TO OCDC CENTER METER	0.0

**** SIZING PROFILES ****

STAGE	DIAMETER METER	TOTAL AREA SQM	ACTIVE AREA SQM	SIDE DC AREA SQM
2	1.0748	0.90725	0.72580	0.90725E-01
3	1.0748	0.90725	0.72580	0.90725E-01
4	1.0748	0.90725	0.72580	0.90725E-01
5	1.0748	0.90725	0.72580	0.90725E-01
6	1.0748	0.90725	0.72580	0.90725E-01

7	1.0748	0.90725	0.72580	0.90725E-01
8	1.0748	0.90725	0.72580	0.90725E-01

**** ADDITIONAL SIZING PROFILES ****

	FLOODING STAGE FACTOR	KPA	DC BACKUP/ PRES. DROP METER	DC BACKUP (TSPC+WHT)
2	67.14	0.7316	0.2087	31.61
3	67.68	0.7375	0.2104	31.85
4	68.63	0.7479	0.2132	32.29
5	70.04	0.7635	0.2176	32.95
6	75.21	0.8139	0.2521	38.17
7	77.66	0.8423	0.2607	39.48
8	80.00	0.8695	0.2693	40.78

	HEIGHT STAGE OVER WEIR METER	DC REL FROTH DENS	TR LIQ REL FROTH DENS	FRA APPR TO SYS LIMIT
2	0.9421E-01	0.6059	0.1962	44.33
3	0.9639E-01	0.6059	0.1954	44.95
4	0.1007	0.6059	0.1942	46.10
5	0.1092	0.6058	0.1923	47.94
6	0.1617	0.6057	0.1899	50.64
7	0.1677	0.6056	0.1871	53.68
8	0.1732	0.6055	0.1847	56.76

*** ASSOCIATED UTILITIES ***

UTILITY USAGE: CW (WATER)

CONDENSER	4.8879+05	2.1632
TOTAL:	4.8879+05 KG/HR	2.1632 \$/HR

UTILITY USAGE: MPS (STEAM)

REBOILER	5028.8320	22.5113	672.8113
TOTAL:	5028.8320 KG/HR	22.5113 \$/HR	672.8113 CO2 KG/HR

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U-O-S BLOCK SECTION

BLOCK: V-101 MODEL: VALVE

INLET STREAM: 29
 OUTLET STREAM: 30
 PROPERTY OPTION SET: UNIQ-RK UNIQAC / REDLICH-KWONG
 HENRY-COMPS ID: HC-1

*** MASS AND ENERGY BALANCE ***

	IN	OUT	RELATIVE DIFF.
TOTAL BALANCE			
MOLE(KMOL/HR)	76.5182	76.5182	0.00000
MASS(KG/HR)	3660.42	3660.42	-0.248467E-15
ENTHALPY(KW)	-2955.37	-2955.37	0.153871E-15

*** CO2 EQUIVALENT SUMMARY ***

FEED STREAMS CO2E	0.328179E-08 KG/HR
PRODUCT STREAMS CO2E	0.328179E-08 KG/HR
NET STREAMS CO2E PRODUCTION	0.00000 KG/HR
UTILITIES CO2E PRODUCTION	0.00000 KG/HR
TOTAL CO2E PRODUCTION	0.00000 KG/HR

*** INPUT DATA ***

VALVE OUTLET PRESSURE	KPA	101.000
VALVE FLOW COEF CALC.		NO

FLASH SPECIFICATIONS:

NPHASE 2
 MAX NUMBER OF ITERATIONS 30
 CONVERGENCE TOLERANCE 0.000100000

*** RESULTS ***

VALVE PRESSURE DROP KPA 474.000
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STREAM SECTION

STREAM COSTS

ID	PRICE	COST \$/HR
1	0.7000 \$/KG	3661.4365
27	3.3000 \$/KG	1.4358+04
31	6.5000 \$/KG	28.0150

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STREAM SECTION

1 10 11 12 13

STREAM ID	1	10	11	12	13
FROM :	----	E-104	B6	----	T-201
TO :	E-101	B6	T-201	T-201	----

SUBSTREAM: MIXED

PHASE: VAPOR VAPOR VAPOR LIQUID VAPOR

COMPONENTS: KMOL/HR

N2	0.0	861.2961	861.2961	0.0	861.0639
ARGON	0.0	11.4050	11.4050	0.0	11.3992
O2	0.0	51.8374	51.8374	0.0	51.8129
CO2	0.0	50.4188	50.4188	0.0	50.0192
PROPYLEN	124.3000	10.9428	10.9428	0.0	10.9288
FORMA-01	0.0	4.9720	4.9720	0.0	4.1727-03
ACETALD	0.0	1.8645	1.8645	0.0	2.6633-03
ACROL	0.0	79.4752	79.4752	0.0	7.9475-02
H2O	0.0	1071.8645	1071.8645	2.1290+04	42.7421
AC-ACET	0.0	3.1075	3.1075	0.0	6.1063-25
AC-ACRY	0.0	12.1037	12.1037	0.0	1.8846-20
HIDROQUI	0.0	0.0	0.0	0.0	0.0

COMPONENTS: KG/HR

N2	0.0	2.4128+04	2.4128+04	0.0	2.4121+04
ARGON	0.0	455.6067	455.6067	0.0	455.3756
O2	0.0	1658.7335	1658.7335	0.0	1657.9514
CO2	0.0	2218.9227	2218.9227	0.0	2201.3364
PROPYLEN	5230.6236	460.4814	460.4814	0.0	459.8918
FORMA-01	0.0	149.2907	149.2907	0.0	0.1253
ACETALD	0.0	82.1371	82.1371	0.0	0.1173
ACROL	0.0	4455.7096	4455.7096	0.0	4.4557
H2O	0.0	1.9310+04	1.9310+04	3.8355+05	770.0107
AC-ACET	0.0	186.6133	186.6133	0.0	3.6670-23
AC-ACRY	0.0	872.2360	872.2360	0.0	1.3581-18
HIDROQUI	0.0	0.0	0.0	0.0	0.0

COMPONENTS: MASS FRAC

N2	0.0	0.4470	0.4470	0.0	0.8130
ARGON	0.0	8.4407-03	8.4407-03	0.0	1.5348-02
O2	0.0	3.0730-02	3.0730-02	0.0	5.5878-02
CO2	0.0	4.1108-02	4.1108-02	0.0	7.4192-02
PROPYLEN	1.0000	8.5310-03	8.5310-03	0.0	1.5500-02
FORMA-01	0.0	2.7658-03	2.7658-03	0.0	4.2227-06
ACETALD	0.0	1.5217-03	1.5217-03	0.0	3.9543-06
ACROL	0.0	8.2547-02	8.2547-02	0.0	1.5017-04
H2O	0.0	0.3577	0.3577	1.0000	2.5952-02
AC-ACET	0.0	3.4572-03	3.4572-03	0.0	1.2359-27
AC-ACRY	0.0	1.6159-02	1.6159-02	0.0	4.5773-23

HIDROQUI	0.0	0.0	0.0	0.0	0.0
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COST:

\$/HR	3661.4365	MISSING	MISSING	MISSING	MISSING
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TOTAL FLOW:

KMOL/HR	124.3000	2159.2875	2159.2875	2.1290+04	1028.0525
KG/HR	5230.6236	5.3978+04	5.3978+04	3.8355+05	2.9671+04
CUM/HR	2682.4934	3.7502+04	3.7502+04	391.6279	1.4852+04

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STREAM SECTION

1 10 11 12 13 (CONTINUED)

STREAM ID	1	10	11	12	13
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STATE VARIABLES:

TEMP C	197.0000	105.0000	105.0000	40.0000	40.0178
PRES KPA	180.0000	180.0000	180.0000	180.0000	180.0000
VFRAC	1.0000	1.0000	1.0000	0.0	1.0000
LFRAC	0.0	0.0	0.0	1.0000	0.0
SFRAC	0.0	0.0	0.0	0.0	0.0

ENTHALPY:

KCAL/MOL	8.0133	-31.6161	-31.6161	-67.9951	-6.8206
KCAL/KG	190.4263	-1264.7517	-1264.7517	-3774.3013	-236.3247
KW	1158.4042	-7.9396+04	-7.9396+04	-1.6836+06	-8154.8508

ENTROPY:

CAL/MOL-K	-26.7742	-3.4800	-3.4800	-38.0954	-0.2231
CAL/GM-K	-0.6363	-0.1392	-0.1392	-2.1146	-7.7309-03

DENSITY:

KMOL/CUM	4.6337-02	5.7579-02	5.7579-02	54.3632	6.9220-02
KG/CUM	1.9499	1.4393	1.4393	979.3681	1.9978
AVG MW	42.0806	24.9979	24.9979	18.0153	28.8610

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STREAM SECTION

14 15 16 17O18 19

STREAM ID	14	15	16	17O18	19
FROM :	T-201	E-205	E-104	E-208	T-202
TO :	E-205	E-104	E-208	T-202	E-207

SUBSTREAM: MIXED

PHASE:	LIQUID	MIXED	MIXED	MIXED	VAPOR
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COMPONENTS: KMOL/HR

N2	0.2322	0.2322	0.2322	0.2322	0.2322
ARGON	5.7841-03	5.7841-03	5.7841-03	5.7841-03	5.7841-03
O2	2.4442-02	2.4442-02	2.4442-02	2.4442-02	2.4442-02
CO2	0.3996	0.3996	0.3996	0.3996	0.3996
PROPYLEN	1.4011-02	1.4011-02	1.4011-02	1.4011-02	1.4011-02
FORMA-01	4.9678	4.9678	4.9678	4.9678	4.8723
ACETALD	1.8618	1.8618	1.8618	1.8618	2.9752
ACROL	79.3957	79.3957	79.3957	79.3957	137.6975
H2O	2.2319+04	2.2319+04	2.2319+04	2.2319+04	17.8683
AC-ACET	3.1075	3.1075	3.1075	3.1075	2.0667-06
AC-ACRY	12.1037	12.1037	12.1037	12.1037	1.0013-04
HIDROQUI	0.0	0.0	0.0	0.0	0.0

COMPONENTS: KG/HR

N2	6.5053	6.5053	6.5053	6.5053	6.5053
ARGON	0.2311	0.2311	0.2311	0.2311	0.2311
O2	0.7821	0.7821	0.7821	0.7821	0.7821
CO2	17.5863	17.5863	17.5863	17.5863	17.5863
PROPYLEN	0.5896	0.5896	0.5896	0.5896	0.5896
FORMA-01	149.1654	149.1654	149.1654	149.1654	146.2975
ACETALD	82.0198	82.0198	82.0198	82.0198	131.0689
ACROL	4451.2538	4451.2538	4451.2538	4451.2538	7719.8949
H2O	4.0209+05	4.0209+05	4.0209+05	4.0209+05	321.9027
AC-ACET	186.6133	186.6133	186.6133	186.6133	1.2411-04
AC-ACRY	872.2360	872.2360	872.2360	872.2360	7.2155-03
HIDROQUI	0.0	0.0	0.0	0.0	0.0

COMPONENTS: MASS FRAC

N2	1.5950-05	1.5950-05	1.5950-05	1.5950-05	7.7955-04
ARGON	5.6654-07	5.6654-07	5.6654-07	5.6654-07	2.7690-05
O2	1.9176-06	1.9176-06	1.9176-06	1.9176-06	9.3722-05
CO2	4.3119-05	4.3119-05	4.3119-05	4.3119-05	2.1074-03
PROPYLEN	1.4456-06	1.4456-06	1.4456-06	1.4456-06	7.0652-05
FORMA-01	3.6573-04	3.6573-04	3.6573-04	3.6573-04	1.7531-02
ACETALD	2.0110-04	2.0110-04	2.0110-04	2.0110-04	1.5707-02
ACROL	1.0914-02	1.0914-02	1.0914-02	1.0914-02	0.9251
H2O	0.9859	0.9859	0.9859	0.9859	3.8575-02
AC-ACET	4.5755-04	4.5755-04	4.5755-04	4.5755-04	1.4873-08
AC-ACRY	2.1386-03	2.1386-03	2.1386-03	2.1386-03	8.6467-07
HIDROQUI	0.0	0.0	0.0	0.0	0.0

TOTAL FLOW:

KMOL/HR	2.2421+04	2.2421+04	2.2421+04	2.2421+04	164.0895
KG/HR	4.0785+05	4.0785+05	4.0785+05	4.0785+05	8344.8656
CUM/HR	431.0365	434.7050	440.7920	457.9253	4280.8545

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STREAM SECTION

14 15 16 17O18 19 (CONTINUED)

STREAM ID	14	15	16	17O18	19
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STATE VARIABLES:

TEMP C	70.4522	76.8350	85.9099	100.0000	50.7455
PRES KPA	180.0000	180.0000	180.0000	180.0000	101.0000
VFRAC	0.0	1.8295-06	6.3649-06	3.2351-05	1.0000
LFRAC	1.0000	1.0000	1.0000	1.0000	0.0
SFRAC	0.0	0.0	0.0	0.0	0.0

ENTHALPY:

KCAL/MOL	-67.2966	-67.1777	-67.0071	-66.7381	-24.0463
KCAL/KG	-3699.5558	-3693.0203	-3683.6416	-3668.8575	-472.8360
KW	-1.7548+06	-1.7517+06	-1.7473+06	-1.7403+06	-4588.9103

ENTROPY:

CAL/MOL-K	-36.3806	-36.0395	-35.5612	-34.8325	-16.1443
CAL/GM-K	-2.0000	-1.9812	-1.9549	-1.9149	-0.3175

DENSITY:

KMOL/CUM	52.0174	51.5784	50.8661	48.9630	3.8331-02
KG/CUM	946.2187	938.2335	925.2772	890.6579	1.9493

AVG MW 18.1904 18.1904 18.1904 18.1904 50.8556

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STREAM SECTION

2 20 21 22 23

STREAM ID	2	20	21	22	23
FROM :	----	T-202	E-207	T-203	T-203
TO :	E-102	----	T-203	----	P-204

SUBSTREAM: MIXED

PHASE: VAPOR LIQUID MIXED VAPOR LIQUID

COMPONENTS: KMOL/HR

N2	0.0	1.5668-12	0.2322	0.2322	7.5925-21
ARGON	0.0	1.7777-13	5.7841-03	5.7841-03	1.1713-19
O2	0.0	7.3385-13	2.4442-02	2.4442-02	1.0908-20
CO2	0.0	2.5886-08	0.3996	0.3996	7.6481-11
PROPYLEN	0.0	5.8472-12	1.4011-02	1.4011-02	1.3780-11
FORMA-01	0.0	0.1405	4.8723	4.8261	4.6240-02
ACETALD	0.0	9.4004-02	2.9752	1.4876	1.4876
ACROL	0.0	0.8312	137.6975	0.1376	137.5598
H2O	924.8800	2.2318+04	17.8683	1.7424-03	17.8667
AC-ACET	0.0	3.1075	2.0667-06	1.1430-15	2.0667-06
AC-ACRY	0.0	12.1036	1.0013-04	7.3323-19	1.0013-04
HIDROQUI	0.0	0.0	0.0	0.0	0.0

COMPONENTS: KG/HR

N2	0.0	4.3893-11	6.5053	6.5053	2.1269-19
ARGON	0.0	7.1016-12	0.2311	0.2311	4.6792-18

O2	0.0	2.3482-11	0.7821	0.7821	3.4905-19
CO2	0.0	1.1392-06	17.5863	17.5863	3.3659-09
PROPYLEN	0.0	2.4606-10	0.5896	0.5896	5.7985-10
FORMA-01	0.0	4.2172	146.2975	144.9092	1.3884
ACETALD	0.0	4.1412	131.0689	65.5344	65.5344
ACROL	0.0	46.5989	7719.8949	7.7148	7712.1749
H2O	1.6662+04	4.0206+05	321.9027	3.1390-02	321.8729
AC-ACET	0.0	186.6132	1.2411-04	6.8639-14	1.2411-04
AC-ACRY	0.0	872.2288	7.2155-03	5.2839-17	7.2156-03
HIDROQUI	0.0	0.0	0.0	0.0	0.0

COMPONENTS: MASS FRAC

N2	0.0	1.0887-16	7.7955-04	2.6674-02	2.6255-23
ARGON	0.0	1.7615-17	2.7690-05	9.4744-04	5.7761-22
O2	0.0	5.8244-17	9.3722-05	3.2069-03	4.3088-23
CO2	0.0	2.8257-12	2.1074-03	7.2109-02	4.1550-13
PROPYLEN	0.0	6.1030-16	7.0652-05	2.4175-03	7.1578-14
FORMA-01	0.0	1.0460-05	1.7531-02	0.5942	1.7139-04
ACETALD	0.0	1.0272-05	1.5707-02	0.2687	8.0897-03
ACROL	0.0	1.1558-04	0.9251	3.1633-02	0.9520
H2O	1.0000	0.9972	3.8575-02	1.2871-04	3.9733-02
AC-ACET	0.0	4.6286-04	1.4873-08	2.8144-16	1.5320-08
AC-ACRY	0.0	2.1634-03	8.6467-07	2.1666-19	8.9070-07
HIDROQUI	0.0	0.0	0.0	0.0	0.0

TOTAL FLOW:

KMOL/HR	924.8800	2.2334+04	164.0895	7.1291	156.9604
KG/HR	1.6662+04	4.0317+05	8344.8656	243.8842	8100.9780
CUM/HR	1.6566+04	438.9990	26.6410	157.8181	10.0859

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STREAM SECTION

2 20 21 22 23 (CONTINUED)

STREAM ID	2	20	21	22	23
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STATE VARIABLES:

TEMP C	119.0000	99.8408	20.0000	0.6177	51.3461
PRES KPA	180.0000	101.0000	101.0000	101.0000	101.0000
VFRAC	1.0000	0.0	4.2704-03	1.0000	0.0
LFRAC	0.0	1.0000	0.9957	0.0	1.0000
SFRAC	0.0	0.0	0.0	0.0	0.0

ENTHALPY:

KCAL/MOL	-57.0204	-66.9029	-31.8227	-31.9881	-30.7590
KCAL/KG	-3165.1133	-3706.1155	-625.7473	-935.0600	-595.9715
KW	-6.1333+04	-1.7377+06	-6072.9267	-265.2179	-5614.9085

ENTROPY:

CAL/MOL-K	-9.5747	-34.8799	-40.3804	-8.1342	-38.6230
CAL/GM-K	-0.5315	-1.9322	-0.7940	-0.2378	-0.7483

DENSITY:

KMOL/CUM	5.5829-02	50.8744	6.1593	4.5173-02	15.5624
KG/CUM	1.0058	918.3855	313.2337	1.5454	803.2018
AVG MW	18.0153	18.0520	50.8556	34.2096	51.6116

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STREAM SECTION

24 25 26 27 28

STREAM ID	24	25	26	27	28
FROM :	P-204	T-204	T-204	MIX2	SPLIT
TO :	E-209	SPLIT	MIX2	----	----

SUBSTREAM: MIXED

PHASE: LIQUID LIQUID LIQUID MIXED LIQUID

COMPONENTS: KMOL/HR

N2	7.5925-21	0.0	0.0	0.0	0.0
ARGON	1.1713-19	0.0	0.0	0.0	0.0
O2	1.0908-20	0.0	0.0	0.0	0.0
CO2	7.6481-11	7.6481-11	2.1769-20	2.1769-20	1.9120-12
PROPYLEN	1.3780-11	1.3780-11	2.5998-20	2.5998-20	3.4449-13

FORMA-01	4.6240-02	4.6092-02	1.4853-04	1.4853-04	1.1523-03
ACETALD	1.4876	1.2384	0.2493	0.2493	3.0959-02
ACROL	137.5598	60.6492	76.9106	76.9106	1.5162
H2O	17.8667	16.5466	1.3201	1.3201	0.4137
AC-ACET	2.0667-06	4.3456-11	2.0666-06	2.0666-06	1.0864-12
AC-ACRY	1.0013-04	5.8990-12	1.0013-04	1.0013-04	1.4747-13
HIDROQUI	0.0	0.0	0.0	3.9142-02	0.0

COMPONENTS: KG/HR

N2	2.1269-19	0.0	0.0	0.0	0.0
ARGON	4.6792-18	0.0	0.0	0.0	0.0
O2	3.4905-19	0.0	0.0	0.0	0.0
CO2	3.3659-09	3.3659-09	9.5806-19	9.5806-19	8.4148-11
PROPYLEN	5.7985-10	5.7985-10	1.0940-18	1.0940-18	1.4496-11
FORMA-01	1.3884	1.3840	4.4598-03	4.4598-03	3.4599-02
ACETALD	65.5344	54.5542	10.9803	10.9803	1.3639
ACROL	7712.1749	3400.2461	4311.9287	4311.9287	85.0062
H2O	321.8729	298.0909	23.7820	23.7820	7.4523
AC-ACET	1.2411-04	2.6097-09	1.2411-04	1.2411-04	6.5242-11
AC-ACRY	7.2156-03	4.2510-10	7.2156-03	7.2156-03	1.0628-11
HIDROQUI	0.0	0.0	0.0	4.3100	0.0

COMPONENTS: MASS FRAC

N2	2.6255-23	0.0	0.0	0.0	0.0
ARGON	5.7761-22	0.0	0.0	0.0	0.0
O2	4.3088-23	0.0	0.0	0.0	0.0
CO2	4.1550-13	8.9656-13	2.2041-22	2.2019-22	8.9656-13
PROPYLEN	7.1578-14	1.5445-13	2.5169-22	2.5144-22	1.5445-13
FORMA-01	1.7139-04	3.6864-04	1.0260-06	1.0250-06	3.6864-04
ACETALD	8.0897-03	1.4531-02	2.5261-03	2.5236-03	1.4531-02
ACROL	0.9520	0.9057	0.9920	0.9910	0.9057
H2O	3.9733-02	7.9400-02	5.4713-03	5.4659-03	7.9400-02
AC-ACET	1.5320-08	6.9512-13	2.8552-08	2.8524-08	6.9512-13
AC-ACRY	8.9070-07	1.1323-13	1.6600-06	1.6584-06	1.1323-13
HIDROQUI	0.0	0.0	0.0	9.9057-04	0.0

COST:

\$/HR	MISSING	MISSING	MISSING	1.4358+04	MISSING
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TOTAL FLOW:

KMOL/HR	156.9604	78.4802	78.4802	78.5194	1.9620
KG/HR	8100.9780	3754.2751	4346.7028	4351.0128	93.8569
CUM/HR	10.0942	5.2007	6.1328	526.9781	0.1300
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STREAM SECTION

24 25 26 27 28 (CONTINUED)

STREAM ID	24	25	26	27	28
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STATE VARIABLES:

TEMP C	51.8421	110.6745	114.3833	52.2569	110.6745
PRES KPA	575.0000	575.0000	575.0000	101.0000	575.0000
VFRAC	0.0	0.0	0.0	0.2546	0.0
LFRAC	1.0000	1.0000	1.0000	0.7454	1.0000
SFRAC	0.0	0.0	0.0	0.0	0.0

ENTHALPY:

KCAL/MOL	-30.7418	-33.2099	-24.8961	-24.9259	-33.2099
KCAL/KG	-595.6377	-694.2279	-449.5014	-449.8190	-694.2279
KW	-5611.7637	-3031.1530	-2272.3264	-2276.1869	-75.7788

ENTROPY:

CAL/MOL-K	-38.5923	-33.5234	-34.3649	-33.8683	-33.5234
CAL/GM-K	-0.7477	-0.7008	-0.6205	-0.6112	-0.7008

DENSITY:

KMOL/CUM	15.5496	15.0904	12.7969	0.1490	15.0904
KG/CUM	802.5413	721.8840	708.7671	8.2565	721.8840
AVG MW	51.6116	47.8372	55.3860	55.4133	47.8372

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STREAM SECTION

29 3 30 31 4

STREAM ID	29	3	30	31	4
FROM :	SPLIT	----	V-101	----	E-101
TO :	V-101	C-101	T-202	MIX2	MIX1

SUBSTREAM: MIXED

PHASE: LIQUID VAPOR MIXED LIQUID VAPOR

COMPONENTS: KMOL/HR

N2	0.0	861.2961	0.0	0.0	0.0
ARGON	0.0	11.4050	0.0	0.0	0.0
O2	0.0	231.6221	0.0	0.0	0.0
CO2	7.4569-11	0.0	7.4569-11	0.0	0.0
PROPYLEN	1.3435-11	0.0	1.3435-11	0.0	124.3000
FORMA-01	4.4939-02	0.0	4.4939-02	0.0	0.0
ACETALD	1.2074	0.0	1.2074	0.0	0.0
ACROL	59.1330	0.0	59.1330	0.0	0.0
H2O	16.1329	4.9868	16.1329	0.0	0.0
AC-ACET	4.2370-11	0.0	4.2370-11	0.0	0.0
AC-ACRY	5.7515-12	0.0	5.7515-12	0.0	0.0
HIDROQUI	0.0	0.0	0.0	3.9142-02	0.0

COMPONENTS: KG/HR

N2	0.0	2.4128+04	0.0	0.0	0.0
ARGON	0.0	455.6067	0.0	0.0	0.0
O2	0.0	7411.6295	0.0	0.0	0.0
CO2	3.2818-09	0.0	3.2818-09	0.0	0.0
PROPYLEN	5.6536-10	0.0	5.6536-10	0.0	5230.6236
FORMA-01	1.3494	0.0	1.3494	0.0	0.0
ACETALD	53.1903	0.0	53.1903	0.0	0.0
ACROL	3315.2400	0.0	3315.2400	0.0	0.0
H2O	290.6386	89.8379	290.6386	0.0	0.0
AC-ACET	2.5444-09	0.0	2.5444-09	0.0	0.0
AC-ACRY	4.1448-10	0.0	4.1448-10	0.0	0.0
HIDROQUI	0.0	0.0	0.0	4.3100	0.0

COMPONENTS: MASS FRAC

N2	0.0	0.7520	0.0	0.0	0.0
ARGON	0.0	1.4200-02	0.0	0.0	0.0
O2	0.0	0.2310	0.0	0.0	0.0
CO2	8.9656-13	0.0	8.9656-13	0.0	0.0
PROPYLEN	1.5445-13	0.0	1.5445-13	0.0	1.0000
FORMA-01	3.6864-04	0.0	3.6864-04	0.0	0.0
ACETALD	1.4531-02	0.0	1.4531-02	0.0	0.0
ACROL	0.9057	0.0	0.9057	0.0	0.0
H2O	7.9400-02	2.8000-03	7.9400-02	0.0	0.0
AC-ACET	6.9512-13	0.0	6.9512-13	0.0	0.0
AC-ACRY	1.1323-13	0.0	1.1323-13	0.0	0.0
HIDROQUI	0.0	0.0	0.0	1.0000	0.0

COST:

\$/HR	MISSING	MISSING	MISSING	28.0150	MISSING
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TOTAL FLOW:

KMOL/HR	76.5182	1109.3100	76.5182	3.9142-02	124.3000
KG/HR	3660.4182	3.2085+04	3660.4182	4.3100	5230.6236
CUM/HR	5.0706	2.7213+04	482.3287	3.3062-03	3337.9414
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STREAM SECTION

29 3 30 31 4 (CONTINUED)

STREAM ID	29	3	30	31	4
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STATE VARIABLES:

TEMP C	110.6745	25.0000	51.5739	30.0000	310.0000
PRES KPA	575.0000	101.0000	101.0000	101.0000	180.0000
VFRAC	0.0	1.0000	0.2393	0.0	1.0000
LFRAC	1.0000	0.0	0.7607	1.0000	0.0
SFRAC	0.0	0.0	0.0	0.0	0.0

ENTHALPY:

KCAL/MOL	-33.2099	-0.2613	-33.2099	-84.8043	10.6578
KCAL/KG	-694.2279	-9.0344	-694.2279	-770.1605	253.2701
KW	-2955.3741	-337.1181	-2955.3741	-3.8605	1540.6963

ENTROPY:

CAL/MOL-K	-33.5234	1.1354	-33.0320	-108.2242	-21.7469
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CAL/GM-K	-0.7008	3.9257-02	-0.6905	-0.9829	-0.5168
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DENSITY:

KMOL/CUM	15.0904	4.0764-02	0.1586	11.8388	3.7239-02
KG/CUM	721.8840	1.1790	7.5891	1303.6009	1.5670
AVG MW	47.8372	28.9234	47.8372	110.1124	42.0806

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STREAM SECTION

5 6 7 8 8A

STREAM ID	5	6	7	8	8A
FROM :	E-102	C-101	E-103	MIX1	R-IMAG
TO :	MIX1	E-103	MIX1	R-IMAG	R-101

SUBSTREAM: MIXED

PHASE: VAPOR VAPOR VAPOR VAPOR VAPOR

COMPONENTS: KMOL/HR

N2	0.0	861.2961	861.2961	861.2961	861.2961
ARGON	0.0	11.4050	11.4050	11.4050	11.4050
O2	0.0	231.6221	231.6221	231.6221	225.0964
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	124.3000	119.3280
FORMA-01	0.0	0.0	0.0	0.0	4.9720
ACETALD	0.0	0.0	0.0	0.0	1.8645
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	924.8800	4.9868	4.9868	929.8668	929.8668
AC-ACET	0.0	0.0	0.0	0.0	3.1075
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

COMPONENTS: KG/HR

N2	0.0	2.4128+04	2.4128+04	2.4128+04	2.4128+04
ARGON	0.0	455.6067	455.6067	455.6067	455.6067
O2	0.0	7411.6295	7411.6295	7411.6295	7202.8133
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	5230.6236	5021.3986
FORMA-01	0.0	0.0	0.0	0.0	149.2907
ACETALD	0.0	0.0	0.0	0.0	82.1371
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	1.6662+04	89.8379	89.8379	1.6752+04	1.6752+04
AC-ACET	0.0	0.0	0.0	0.0	186.6133
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

COMPONENTS: MASS FRAC

N2	0.0	0.7520	0.7520	0.4470	0.4470
ARGON	0.0	1.4200-02	1.4200-02	8.4407-03	8.4407-03
O2	0.0	0.2310	0.2310	0.1373	0.1334
CO2	0.0	0.0	0.0	0.0	0.0
PROPYLEN	0.0	0.0	0.0	9.6904-02	9.3028-02
FORMA-01	0.0	0.0	0.0	0.0	2.7658-03
ACETALD	0.0	0.0	0.0	0.0	1.5217-03
ACROL	0.0	0.0	0.0	0.0	0.0
H2O	1.0000	2.8000-03	2.8000-03	0.3103	0.3103
AC-ACET	0.0	0.0	0.0	0.0	3.4572-03
AC-ACRY	0.0	0.0	0.0	0.0	0.0
HIDROQUI	0.0	0.0	0.0	0.0	0.0

TOTAL FLOW:

KMOL/HR	924.8800	1109.3100	1109.3100	2158.4900	2156.9363
KG/HR	1.6662+04	3.2085+04	3.2085+04	5.3978+04	5.3978+04
CUM/HR	2.4819+04	1.9074+04	2.9894+04	5.8064+04	5.8038+04

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STREAM SECTION

5 6 7 8 8A (CONTINUED)

STREAM ID	5	6	7	8	8A
-----------	---	---	---	---	----

STATE VARIABLES:

TEMP C	310.0000	99.1273	310.0000	309.8320	310.0000
--------	----------	---------	----------	----------	----------

PRES KPA	180.0000	180.0000	180.0000	180.0000	180.0000
VFRAC	1.0000	1.0000	1.0000	1.0000	1.0000
LFRAC	0.0	0.0	0.0	0.0	0.0
SFRAC	0.0	0.0	0.0	0.0	0.0

ENTHALPY:

KCAL/MOL	-55.4075	0.2551	1.7545	-22.2258	-22.4964
KCAL/KG	-3075.5834	8.8208	60.6595	-888.7815	-898.9537
KW	-5.9598+04	329.1453	2263.5000	-5.5794+04	-5.6433+04

ENTROPY:

CAL/MOL-K	-6.2293	1.5351	4.7220	0.2026	0.2222
CAL/GM-K	-0.3458	5.3074-02	0.1633	8.1036-03	8.8805-03

DENSITY:

KMOL/CUM	3.7265-02	5.8159-02	3.7109-02	3.7174-02	3.7164-02
KG/CUM	0.6713	1.6821	1.0733	0.9296	0.9300

AVG MW 18.0153 28.9234 28.9234 25.0071 25.0251

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STREAM SECTION

9 L S4 S6

STREAM ID	9	L	S4	S6
FROM :	R-101	E-209	T-204	E-205
TO :	E-104	T-204	E-205	----

CONV. MAX. REL. ERR: 0.0 -5.4391-07 0.0 0.0

SUBSTREAM: MIXED

PHASE: VAPOR LIQUID VAPOR MIXED

COMPONENTS: KMOL/HR

N2	861.2961	7.5925-21	0.0	0.0
ARGON	11.4050	1.1713-19	0.0	0.0
O2	51.8374	1.0908-20	0.0	0.0
CO2	50.4188	7.6481-11	8.9803-08	8.9803-08
PROPYLEN	10.9428	1.3780-11	1.1991-08	1.1991-08
FORMA-01	4.9720	4.6240-02	0.9070	0.9070
ACETALD	1.8645	1.4876	7.7935	7.7935
ACROL	79.4752	137.5598	395.1358	395.1358
H2O	1071.8645	17.8667	109.1637	109.1637
AC-ACET	3.1075	2.0667-06	3.0432-11	3.0432-11
AC-ACRY	12.1037	1.0013-04	1.3624-12	1.3624-12
HIDROQUI	0.0	0.0	0.0	0.0

COMPONENTS: KG/HR

N2	2.4128+04	2.1269-19	0.0	0.0
ARGON	455.6067	4.6792-18	0.0	0.0
O2	1658.7335	3.4905-19	0.0	0.0
CO2	2218.9227	3.3659-09	3.9522-06	3.9522-06
PROPYLEN	460.4814	5.7985-10	5.0458-07	5.0458-07
FORMA-01	149.2907	1.3884	27.2338	27.2338
ACETALD	82.1371	65.5344	343.3297	343.3297
ACROL	4455.7096	7712.1749	2.2153+04	2.2153+04
H2O	1.9310+04	321.8729	1966.6149	1966.6149
AC-ACET	186.6133	1.2411-04	1.8275-09	1.8275-09
AC-ACRY	872.2360	7.2156-03	9.8178-11	9.8178-11
HIDROQUI	0.0	0.0	0.0	0.0

COMPONENTS: MASS FRAC

N2	0.4470	2.6255-23	0.0	0.0
ARGON	8.4407-03	5.7761-22	0.0	0.0
O2	3.0730-02	4.3088-23	0.0	0.0
CO2	4.1108-02	4.1550-13	1.6138-10	1.6138-10
PROPYLEN	8.5310-03	7.1578-14	2.0603-11	2.0603-11
FORMA-01	2.7658-03	1.7139-04	1.1120-03	1.1120-03
ACETALD	1.5217-03	8.0897-03	1.4019-02	1.4019-02
ACROL	8.2547-02	0.9520	0.9046	0.9046
H2O	0.3577	3.9733-02	8.0302-02	8.0302-02
AC-ACET	3.4572-03	1.5320-08	7.4624-14	7.4624-14
AC-ACRY	1.6159-02	8.9070-07	4.0089-15	4.0089-15
HIDROQUI	0.0	0.0	0.0	0.0

TOTAL FLOW:

KMOL/HR	2159.2875	156.9604	513.0000	513.0000
---------	-----------	----------	----------	----------

KG/HR 5.3978+04 8100.9780 2.4490+04 2.4490+04
 CUM/HR 5.8078+04 11.2935 2627.4962 561.6201
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STREAM SECTION

9 L S4 S6 (CONTINUED)

STREAM ID 9 L S4 S6

STATE VARIABLES:

TEMP C 310.0000 111.0000 110.6745 110.6143
 PRES KPA 180.0000 575.0000 575.0000 575.0000
 VFRAC 1.0000 0.0 1.0000 0.2035
 LFRAC 0.0 1.0000 0.0 0.7965
 SFRAC 0.0 0.0 0.0 0.0

ENTHALPY:

KCAL/MOL -29.8446 -29.0964 -26.7685 -31.9645
 KCAL/KG -1193.8857 -563.7566 -560.7263 -669.5669
 KW -7.4947+04 -5311.3978 -1.5971+04 -1.9071+04

ENTROPY:

CAL/MOL-K 0.2528 -33.9848 -16.5055 -30.0436
 CAL/GM-K 1.0112-02 -0.6585 -0.3457 -0.6293

DENSITY:

KMOL/CUM 3.7179-02 13.8983 0.1952 0.9134
 KG/CUM 0.9294 717.3159 9.3207 43.6062
 AVG MW 24.9979 51.6116 47.7390 47.7390

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UTILITY SECTION

UTILITY USAGE: CW (WATER)

COOLING WATER, INLET TEMP=20 C, OUTLET TEMP=25 C
 INPUT DATA:

INLET TEMPERATURE 20.0000 C
 OUTLET TEMPERATURE 25.0000 C
 INLET PRESSURE 101.3250 KPA
 OUTLET PRESSURE 101.3250 KPA
 HEAT TRANSFER COEFFICIENT 3224.4196 KCAL/HR-SQM-K
 PRICE 8.8760-10 \$/CAL
 INDEX TYPE FUEL

RESULT:

COOLING VALUE 4.9861 KCAL/KG
 INDEXED PRICE 8.8760-10 \$/CAL

THIS UTILITY IS PURCHASED

USAGE:

BLOCK ID	MODEL	DUTY	USAGE RATE	COST
	KW	KG/HR	\$/HR	
T-202	RADFRAC	2.7736+04	4.7831+06	21.1685
T-204	RADFRAC	2834.4216	4.8879+05	2.1632
TOTAL:		3.0571+04	5.2719+06	23.3317

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UTILITY SECTION

UTILITY USAGE: ELECTRIC (ELECTRICITY)

ELECTRICAL UTILITY

INPUT DATA:

CO2 DATA SOURCE US-EPA-RULE-E9-5711
 CO2 FUEL SOURCE NATURAL_GAS
 CO2 EMISSION FACTOR 2.3400-07 KG/CAL
 THERMAL EFFICIENCY 0.5800
 PRICE 7.7500-02 \$/KWHR
 INDEX TYPE FUEL

RESULT:

INDEXED PRICE 7.7500-02 \$/KWHR
 CO2 EMISSION FACTOR 2.3400-07 KG/CAL
 TOTAL CO2 EMISSIONS 232.2198 KG/HR

THIS UTILITY IS PURCHASED

USAGE:

BLOCK ID	MODEL	DUTY	USAGE RATE	COST	CO2E EMISSIONS
	KW	KW	\$/HR	KG/HR	
P-204	PUMP	3.1448	3.1448	0.2437	1.0910
C-101	COMPR	666.2634	666.2634	51.6354	231.1288
TOTAL:		669.4082	669.4082	51.8791	232.2198

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UTILITY SECTION

UTILITY USAGE: FIRE-HEA (GENERAL)

FIRE HEATER, INLET TEMP=1000 C, OUTLET TEMP=400 C

INPUT DATA:

INLET TEMPERATURE 1000.0000 C
 OUTLET TEMPERATURE 400.0000 C
 HEAT TRANSFER COEFFICIENT 95.4428 KCAL/HR-SQM-K
 CO2 DATA SOURCE US-EPA-RULE-E9-5711
 CO2 FUEL SOURCE NATURAL_GAS
 CO2 EMISSION FACTOR 2.3400-07 KG/CAL
 THERMAL EFFICIENCY 0.8500
 HEATING VALUE 143.3075 KCAL/KG
 PRICE 1.7794-08 \$/CAL
 INDEX TYPE FUEL

RESULT:

HEATING VALUE 143.3075 KCAL/KG
 INDEXED PRICE 1.7794-08 \$/CAL
 CO2 EMISSION FACTOR 2.3400-07 KG/CAL
 TOTAL CO2 EMISSIONS 959.0428 KG/HR

THIS UTILITY IS PURCHASED

USAGE:

BLOCK ID	MODEL	DUTY	USAGE RATE	COST	CO2E EMISSIONS
	KW	KG/HR	\$/HR	KG/HR	
E-101	HEATER	382.2921	2293.7525	5.8491	90.4925
E-102	HEATER	1734.8992	1.0409+04	26.5440	410.6686
E-103	HEATER	1934.3548	1.1606+04	29.5956	457.8818
TOTAL:		4051.5460	2.4309+04	61.9887	959.0428

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UTILITY SECTION

UTILITY USAGE: HPS (STEAM)

HIGH PRESSURE STEAM, INLET TEMP=250 C, OUTLET TEMP=249 C, PRES=572 PSIA
INPUT DATA:

INLET TEMPERATURE	250.0000 C
OUTLET TEMPERATURE	249.0000 C
INLET VAPOR FRACTION	1.0000
OUTLET VAPOR FRACTION	0.0
HEAT TRANSFER COEFFICIENT	5159.0714 KCAL/HR-SQM-K
CO2 DATA SOURCE	US-EPA-RULE-E9-5711
CO2 FUEL SOURCE	NATURAL_GAS
CO2 EMISSION FACTOR	2.3400-07 KG/CAL
THERMAL EFFICIENCY	0.8500
PRICE	1.0467-08 \$/CAL
INDEX TYPE	FUEL

RESULT:

HEATING VALUE	410.6534 KCAL/KG
INDEXED PRICE	MISSING \$/KG
CO2 EMISSION FACTOR	2.3400-07 KG/CAL

THIS UTILITY IS PURCHASED

THIS UTILITY IS NOT USED BY ANY COST OR UOS BLOCKS
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UTILITY SECTION

UTILITY USAGE: LPS (STEAM)

LOW PRESSURE STEAM, INLET TEMP=125 C, OUTLET TEMP=124 C
INPUT DATA:

INLET TEMPERATURE	125.0000 C
OUTLET TEMPERATURE	124.0000 C
INLET VAPOR FRACTION	1.0000
OUTLET VAPOR FRACTION	0.0
HEAT TRANSFER COEFFICIENT	5159.0714 KCAL/HR-SQM-K
CO2 DATA SOURCE	US-EPA-RULE-E9-5711
CO2 FUEL SOURCE	NATURAL_GAS
CO2 EMISSION FACTOR	2.3400-07 KG/CAL
THERMAL EFFICIENCY	0.8500
PRICE	7.9549-09 \$/CAL
INDEX TYPE	FUEL

RESULT:

HEATING VALUE	523.5213 KCAL/KG
INDEXED PRICE	7.9549-09 \$/CAL
CO2 EMISSION FACTOR	2.3400-07 KG/CAL
TOTAL CO2 EMISSIONS	8800.4582 KG/HR

THIS UTILITY IS PURCHASED

USAGE:

BLOCK ID	MODEL	DUTY	USAGE RATE	COST	CO2E EMISSIONS
	KW	KG/HR	\$/HR	KG/HR	
E-208	HEATER	7012.5980	1.1518+04	47.9662	1659.9544
E-209	HEATER	300.3658	493.3288	2.0545	71.0997
T-202	RADFRAC	2.8621+04	4.7008+04	195.7670	6774.8657
T-203	RADFRAC	1244.2992	2043.6699	8.5110	294.5385

TOTAL: 3.7178+04 6.1062+04 254.2987 8800.4582

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UTILITY SECTION

UTILITY USAGE: MPS (STEAM)

MEDIUM PRESSURE STEAM, INLET TEMP=175 C, OUTLET TEMP=174 C, PRES=127 PSIA
INPUT DATA:

INLET TEMPERATURE 175.0000 C
OUTLET TEMPERATURE 174.0000 C
INLET VAPOR FRACTION 1.0000
OUTLET VAPOR FRACTION 0.0
HEAT TRANSFER COEFFICIENT 5159.0714 KCAL/HR-SQM-K
CO2 DATA SOURCE US-EPA-RULE-E9-5711
CO2 FUEL SOURCE NATURAL_GAS
CO2 EMISSION FACTOR 2.3400-07 KG/CAL
THERMAL EFFICIENCY 0.8500
PRICE 9.2110-09 \$/CAL
INDEX TYPE FUEL

RESULT:

HEATING VALUE 485.9921 KCAL/KG
INDEXED PRICE 9.2110-09 \$/CAL
CO2 EMISSION FACTOR 2.3400-07 KG/CAL
TOTAL CO2 EMISSIONS 672.8113 KG/HR

THIS UTILITY IS PURCHASED

USAGE:

BLOCK ID	MODEL	DUTY KW	USAGE RATE KG/HR	COST \$/HR	CO2E EMISSIONS KG/HR
T-204	RADFRAC	2842.3400	5028.8320	22.5113	672.8113
TOTAL:		2842.3400	5028.8320	22.5113	672.8113

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UTILITY SECTION

UTILITY USAGE: REFR-3 (REFRIGERANT)

REFRIGERANT 3, INLET TEMP=-65 C, OUTLET TEMP=-64 C
INPUT DATA:

INLET TEMPERATURE -65.0000 C
OUTLET TEMPERATURE -64.0000 C
HEAT TRANSFER COEFFICIENT 1117.7988 KCAL/HR-SQM-K
CO2 DATA SOURCE US-EPA-RULE-E9-5711
CO2 FUEL SOURCE NATURAL_GAS
CO2 EMISSION FACTOR 2.3400-07 KG/CAL
THERMAL EFFICIENCY 1.0000
COOLING VALUE 0.3203 KCAL/KG
PRICE 2.4618-08 \$/CAL
INDEX TYPE FUEL

RESULT:

COOLING VALUE 0.3203 KCAL/KG
INDEXED PRICE MISSING \$/KG
CO2 EMISSION FACTOR 2.3400-07 KG/CAL

THIS UTILITY IS PURCHASED

THIS UTILITY IS NOT USED BY ANY COST OR UOS BLOCKS

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UTILITY SECTION

UTILITY USAGE: REFRI-1 (REFRIGERANT)

REFRIGERANT 1, INLET TEMP=-25 C, OUTLET TEMP=-24 C
INPUT DATA:

INLET TEMPERATURE	-25.0000 C
OUTLET TEMPERATURE	-24.0000 C
HEAT TRANSFER COEFFICIENT	1117.7988 KCAL/HR-SQM-K
CO2 DATA SOURCE	US-EPA-RULE-E9-5711
CO2 FUEL SOURCE	NATURAL GAS
CO2 EMISSION FACTOR	2.3400-07 KG/CAL
THERMAL EFFICIENCY	1.0000
COOLING VALUE	0.9554 KCAL/KG
PRICE	1.1472-08 \$/CAL
INDEX TYPE	FUEL

RESULT:

COOLING VALUE	0.9554 KCAL/KG
INDEXED PRICE	1.1472-08 \$/CAL
CO2 EMISSION FACTOR	2.3400-07 KG/CAL
TOTAL CO2 EMISSIONS	510.1551 KG/HR

THIS UTILITY IS PURCHASED

USAGE:

BLOCK ID	MODEL	DUTY	USAGE RATE	COST	CO2E EMISSIONS
	KW	KG/HR	\$/HR	KG/HR	
E-207	HEATER	1484.0163	1.3356+06	14.6383	298.5897
T-203	RADFRAC	1051.4981	9.4635+05	10.3720	211.5654
TOTAL:		2535.5144	2.2820+06	25.0103	510.1551

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UTILITY SECTION

UTILITY USAGE: VLT (GENERAL)

VERY LOW TEMPERATURE, INLET TEMP=-270 C, OUTLET TEMP=-269 C
INPUT DATA:

INLET TEMPERATURE	-270.0000 C
OUTLET TEMPERATURE	-269.0000 C
HEAT TRANSFER COEFFICIENT	1117.7988 KCAL/HR-SQM-K
CO2 DATA SOURCE	US-EPA-RULE-E9-5711
CO2 FUEL SOURCE	NATURAL GAS
CO2 EMISSION FACTOR	2.3400-07 KG/CAL
THERMAL EFFICIENCY	1.0000
COOLING VALUE	0.3203 KCAL/KG
PRICE	3.7263-08 \$/CAL
INDEX TYPE	FUEL

RESULT:

COOLING VALUE	0.3203 KCAL/KG
INDEXED PRICE	MISSING \$/KG
CO2 EMISSION FACTOR	2.3400-07 KG/CAL

THIS UTILITY IS PURCHASED

THIS UTILITY IS NOT USED BY ANY COST OR UOS BLOCKS

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PHYSICAL PROPERTY TABLES SECTION

FLASH CURVE TABLE: BINRY-1

PROPERTIES ALONG A FLASH CURVE FOR THE MIXTURE: (KMOL/HR)

ACROL 1.000 , H2O 1.000 ,

STATE SPECIFICATIONS:

VAPOR FRACTION: 0.000

VARIED VARIABLE(S): PRES MOLEFRAC

PROPERTY SET(S): \$PS-TXY

3 PHASE PV FLASHES WERE PERFORMED.

PROPERTY OPTION SET: UNIQ-RK UNQUAC / REDLICH-KWONG

HENRY-COMPS ID: HC-1

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PHYSICAL PROPERTY TABLES SECTION

FLASH CURVE TABLE: BINRY-1 (CONTINUED)

```
-----
! PRES ! MOLEFRAC ! TEMP ! KVL ! KVL ! GAMMA !
!      !      ! TOTAL ! TOTAL ! TOTAL ! LIQUID !
!      ! ACROL !      ! ACROL ! H2O ! ACROL !
!      !      !      !      !      !      !
! KPA  !      ! C    !      !      !      !
!      !      !      !      !      !      !
=====
! 101.0000 ! 0.0 ! 99.9278 ! 71.8065 ! 1.0000 ! 19.5236 !
! 101.0000 ! 2.0000-02 ! 74.4355 ! 31.6039 ! 0.3754 ! 16.4414 !
! 101.0000 ! 4.0000-02 ! 63.5116 ! 19.3594 ! 0.2350 ! 13.7990 !
! 101.0000 ! 6.0000-02 ! 57.8795 ! 13.7978 ! 0.1831 ! 11.6819 !
! 101.0000 ! 8.0000-02 ! 54.6627 ! 10.6698 ! 0.1591 ! 9.9985 !
!-----+-----+-----+-----+-----!
! 101.0000 ! 0.1000 ! 52.7294 ! 8.6760 ! 0.1471 ! 8.6514 !
! 101.0000 ! 0.1200 ! 52.1165 ! 1.0971 ! 0.6242 ! 1.1160 !
! 101.0000 ! 0.1400 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.1600 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.1800 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
!-----+-----+-----+-----+-----!
! 101.0000 ! 0.2000 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.2200 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.2400 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.2600 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.2800 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
!-----+-----+-----+-----+-----!
! 101.0000 ! 0.3000 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.3200 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.3400 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.3600 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.3800 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
!-----+-----+-----+-----+-----!
! 101.0000 ! 0.4000 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.4200 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.4400 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.4600 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.4800 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
!-----+-----+-----+-----+-----!
! 101.0000 ! 0.5000 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.5200 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
! 101.0000 ! 0.5400 ! 52.1165 ! 1.0971 ! 0.6241 ! 1.1160 !
!-----+-----+-----+-----+-----!
```

!	101.0000 !	0.5600 !	52.1165 !	1.0971 !	0.6241 !	1.1160 !
!	101.0000 !	0.5800 !	52.1165 !	1.0971 !	0.6241 !	1.1160 !
!-----+-----+-----+-----+-----+-----!						
!	101.0000 !	0.6000 !	52.1165 !	1.0971 !	0.6241 !	1.1160 !
!	101.0000 !	0.6200 !	52.1165 !	1.0971 !	0.6241 !	1.1160 !
!	101.0000 !	0.6400 !	52.1165 !	1.0971 !	0.6241 !	1.1160 !
!	101.0000 !	0.6600 !	52.1165 !	1.0971 !	0.6241 !	1.1160 !
!	101.0000 !	0.6800 !	52.1165 !	1.0971 !	0.6241 !	1.1160 !

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PHYSICAL PROPERTY TABLES SECTION

FLASH CURVE TABLE: BINRY-1 (CONTINUED)

!	PRES	!	MOLEFRAC	!	TEMP	!	KVL	!	KVL	!	GAMMA	!
!		!	TOTAL	!	TOTAL	!	TOTAL	!	LIQUID 1	!		!
!		!	ACROL	!		!	ACROL	!	H2O	!	ACROL	!
!		!		!		!		!		!		!
!	KPA	!		!	C	!		!		!		!
!		!		!		!		!		!		!
!=====!												
!	101.0000 !		0.7000 !		52.1165 !		1.0971 !		0.6241 !		1.1160 !	
!	101.0000 !		0.7200 !		52.1165 !		1.0971 !		0.6241 !		1.1160 !	
!	101.0000 !		0.7400 !		52.1165 !		1.0971 !		0.6241 !		1.1160 !	
!	101.0000 !		0.7600 !		52.1165 !		1.0971 !		0.6241 !		1.1160 !	
!	101.0000 !		0.7800 !		52.1165 !		1.0971 !		0.6241 !		1.1160 !	
!-----+-----+-----+-----+-----+-----!												
!	101.0000 !		0.8000 !		52.1003 !		1.0909 !		0.6365 !		1.1102 !	
!	101.0000 !		0.8200 !		52.0387 !		1.0688 !		0.6868 !		1.0899 !	
!	101.0000 !		0.8400 !		51.9784 !		1.0488 !		0.7438 !		1.0716 !	
!	101.0000 !		0.8600 !		51.9238 !		1.0311 !		0.8089 !		1.0554 !	
!	101.0000 !		0.8800 !		51.8809 !		1.0158 !		0.8839 !		1.0412 !	
!-----+-----+-----+-----+-----+-----!												
!	101.0000 !		0.9000 !		51.8579 !		1.0032 !		0.9713 !		1.0290 !	
!	101.0000 !		0.9200 !		51.8659 !		0.9936 !		1.0740 !		1.0189 !	
!	101.0000 !		0.9400 !		51.9204 !		0.9875 !		1.1965 !		1.0108 !	
!	101.0000 !		0.9600 !		52.0437 !		0.9856 !		1.3449 !		1.0049 !	
!	101.0000 !		0.9800 !		52.2677 !		0.9892 !		1.5278 !		1.0013 !	
!-----+-----+-----+-----+-----+-----!												
!	101.0000 !		1.0000 !		52.6400 !		1.0000 !		1.7582 !		1.0000 !	

!	PRES	!	MOLEFRAC	!	GAMMA	!	GAMMA	!	GAMMA	!	KVL2	!
!		!	LIQUID 1	!	LIQUID 2	!	LIQUID 2	!	TOTAL	!		!
!		!	ACROL	!	H2O	!	ACROL	!	H2O	!	ACROL	!
!		!		!		!		!		!		!
!	KPA	!		!		!		!		!		!
!		!		!		!		!		!		!
!=====!												
!	101.0000 !		0.0 !		1.0000 !		MISSING !		MISSING !		MISSING !	
!	101.0000 !		2.0000-02 !		1.0021 !		MISSING !		MISSING !		MISSING !	
!	101.0000 !		4.0000-02 !		1.0081 !		MISSING !		MISSING !		MISSING !	
!	101.0000 !		6.0000-02 !		1.0174 !		MISSING !		MISSING !		MISSING !	
!	101.0000 !		8.0000-02 !		1.0297 !		MISSING !		MISSING !		MISSING !	
!-----+-----+-----+-----+-----+-----!												
!	101.0000 !		0.1000 !		1.0449 !		MISSING !		MISSING !		MISSING !	
!	101.0000 !		0.1200 !		4.5676 !		8.1247 !		1.0527 !		7.9873 !	
!	101.0000 !		0.1400 !		4.5673 !		8.1251 !		1.0527 !		7.9877 !	
!	101.0000 !		0.1600 !		4.5671 !		8.1253 !		1.0527 !		7.9880 !	
!	101.0000 !		0.1800 !		4.5670 !		8.1255 !		1.0527 !		7.9881 !	

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PHYSICAL PROPERTY TABLES SECTION

FLASH CURVE TABLE: BINRY-1 (CONTINUED)

! PRES	! MOLEFRAC	! GAMMA	! GAMMA	! GAMMA	! KVL2	!
!	!	! LIQUID 1	! LIQUID 2	! LIQUID 2	! TOTAL	!
!	! ACROL	! H2O	! ACROL	! H2O	! ACROL	!
!	!	!	!	!	!	!
! KPA	!	!	!	!	!	!
!	!	!	!	!	!	!
=====						
! 101.0000	! 0.2000	! 4.5669	! 8.1256	! 1.0527	! 7.9882	!
! 101.0000	! 0.2200	! 4.5669	! 8.1256	! 1.0527	! 7.9882	!
! 101.0000	! 0.2400	! 4.5668	! 8.1256	! 1.0527	! 7.9882	!
! 101.0000	! 0.2600	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.2800	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
!-----+-----+-----+-----+-----+-----!						
! 101.0000	! 0.3000	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.3200	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.3400	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.3600	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.3800	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
!-----+-----+-----+-----+-----+-----!						
! 101.0000	! 0.4000	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.4200	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.4400	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.4600	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.4800	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
!-----+-----+-----+-----+-----+-----!						
! 101.0000	! 0.5000	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.5200	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.5400	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.5600	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.5800	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
!-----+-----+-----+-----+-----+-----!						
! 101.0000	! 0.6000	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.6200	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.6400	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.6600	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.6800	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
!-----+-----+-----+-----+-----+-----!						
! 101.0000	! 0.7000	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.7200	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.7400	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.7600	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
! 101.0000	! 0.7800	! 4.5668	! 8.1256	! 1.0527	! 7.9883	!
!-----+-----+-----+-----+-----+-----!						
! 101.0000	! 0.8000	! 4.6616	! MISSING	! MISSING	! MISSING	!
! 101.0000	! 0.8200	! 5.0450	! MISSING	! MISSING	! MISSING	!
! 101.0000	! 0.8400	! 5.4799	! MISSING	! MISSING	! MISSING	!
! 101.0000	! 0.8600	! 5.9757	! MISSING	! MISSING	! MISSING	!
! 101.0000	! 0.8800	! 6.5440	! MISSING	! MISSING	! MISSING	!

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PHYSICAL PROPERTY TABLES SECTION

FLASH CURVE TABLE: BINRY-1 (CONTINUED)

! PRES	! MOLEFRAC	! GAMMA	! GAMMA	! GAMMA	! KVL2	!
!	!	! LIQUID 1	! LIQUID 2	! LIQUID 2	! TOTAL	!
!	! ACROL	! H2O	! ACROL	! H2O	! ACROL	!
!	!	!	!	!	!	!
! KPA	!	!	!	!	!	!
!	!	!	!	!	!	!
=====						
! 101.0000	! 0.9000	! 7.1990	! MISSING	! MISSING	! MISSING	!
! 101.0000	! 0.9200	! 7.9581	! MISSING	! MISSING	! MISSING	!
! 101.0000	! 0.9400	! 8.8432	! MISSING	! MISSING	! MISSING	!
! 101.0000	! 0.9600	! 9.8811	! MISSING	! MISSING	! MISSING	!
! 101.0000	! 0.9800	! 11.1046	! MISSING	! MISSING	! MISSING	!
!-----+-----+-----+-----+-----+-----!						
! 101.0000	! 1.0000	! 12.5529	! MISSING	! MISSING	! MISSING	!

```

=====
! PRES ! MOLEFRAC ! KVL2 ! BETA ! MOLEFRAC ! MOLEFRAC !
! ! ! TOTAL ! TOTAL ! VAPOR ! VAPOR !
! ! ACROL ! H2O ! ! ACROL ! H2O !
! ! ! ! ! ! !
! KPA ! ! ! ! ! ! !
! ! ! ! ! ! !
=====
! 101.0000 ! 0.0 ! MISSING ! 1.0000 ! 0.0 ! 1.0000 !
! 101.0000 ! 2.0000-02 ! MISSING ! 1.0000 ! 0.6321 ! 0.3679 !
! 101.0000 ! 4.0000-02 ! MISSING ! 1.0000 ! 0.7744 ! 0.2256 !
! 101.0000 ! 6.0000-02 ! MISSING ! 1.0000 ! 0.8279 ! 0.1721 !
! 101.0000 ! 8.0000-02 ! MISSING ! 1.0000 ! 0.8536 ! 0.1464 !
!-----+-----!
! 101.0000 ! 0.1000 ! MISSING ! 1.0000 ! 0.8676 ! 0.1324 !
! 101.0000 ! 0.1200 ! 0.1439 ! 1.5814-02 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.1400 ! 0.1439 ! 4.5000-02 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.1600 ! 0.1439 ! 7.4181-02 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.1800 ! 0.1439 ! 0.1034 ! 0.8719 ! 0.1281 !
!-----+-----!
! 101.0000 ! 0.2000 ! 0.1438 ! 0.1325 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.2200 ! 0.1438 ! 0.1617 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.2400 ! 0.1438 ! 0.1909 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.2600 ! 0.1438 ! 0.2201 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.2800 ! 0.1438 ! 0.2492 ! 0.8719 ! 0.1281 !
!-----+-----!
! 101.0000 ! 0.3000 ! 0.1438 ! 0.2784 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.3200 ! 0.1438 ! 0.3076 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.3400 ! 0.1438 ! 0.3368 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.3600 ! 0.1438 ! 0.3659 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.3800 ! 0.1438 ! 0.3951 ! 0.8719 ! 0.1281 !
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PHYSICAL PROPERTY TABLES SECTION

FLASH CURVE TABLE: BINRY-1 (CONTINUED)

```

=====
! PRES ! MOLEFRAC ! KVL2 ! BETA ! MOLEFRAC ! MOLEFRAC !
! ! ! TOTAL ! TOTAL ! VAPOR ! VAPOR !
! ! ACROL ! H2O ! ! ACROL ! H2O !
! ! ! ! ! ! !
! KPA ! ! ! ! ! ! !
! ! ! ! ! ! !
=====
! 101.0000 ! 0.4000 ! 0.1438 ! 0.4243 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.4200 ! 0.1438 ! 0.4535 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.4400 ! 0.1438 ! 0.4826 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.4600 ! 0.1438 ! 0.5118 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.4800 ! 0.1438 ! 0.5410 ! 0.8719 ! 0.1281 !
!-----+-----!
! 101.0000 ! 0.5000 ! 0.1438 ! 0.5702 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.5200 ! 0.1438 ! 0.5993 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.5400 ! 0.1438 ! 0.6285 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.5600 ! 0.1438 ! 0.6577 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.5800 ! 0.1438 ! 0.6869 ! 0.8719 ! 0.1281 !
!-----+-----!
! 101.0000 ! 0.6000 ! 0.1438 ! 0.7160 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.6200 ! 0.1438 ! 0.7452 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.6400 ! 0.1438 ! 0.7744 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.6600 ! 0.1438 ! 0.8036 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.6800 ! 0.1438 ! 0.8327 ! 0.8719 ! 0.1281 !
!-----+-----!
! 101.0000 ! 0.7000 ! 0.1438 ! 0.8619 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.7200 ! 0.1438 ! 0.8911 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.7400 ! 0.1438 ! 0.9203 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.7600 ! 0.1438 ! 0.9494 ! 0.8719 ! 0.1281 !
! 101.0000 ! 0.7800 ! 0.1438 ! 0.9786 ! 0.8719 ! 0.1281 !
!-----+-----!
! 101.0000 ! 0.8000 ! MISSING ! 1.0000 ! 0.8727 ! 0.1273 !
=====

```

!	101.0000 !	0.8200 !	MISSING !	1.0000 !	0.8764 !	0.1236 !
!	101.0000 !	0.8400 !	MISSING !	1.0000 !	0.8810 !	0.1190 !
!	101.0000 !	0.8600 !	MISSING !	1.0000 !	0.8868 !	0.1132 !
!	101.0000 !	0.8800 !	MISSING !	1.0000 !	0.8939 !	0.1061 !
!	-----!					
!	101.0000 !	0.9000 !	MISSING !	1.0000 !	0.9029 !	9.7125-02 !
!	101.0000 !	0.9200 !	MISSING !	1.0000 !	0.9141 !	8.5922-02 !
!	101.0000 !	0.9400 !	MISSING !	1.0000 !	0.9282 !	7.1793-02 !
!	101.0000 !	0.9600 !	MISSING !	1.0000 !	0.9462 !	5.3796-02 !
!	101.0000 !	0.9800 !	MISSING !	1.0000 !	0.9694 !	3.0555-02 !
!	-----!					
!	101.0000 !	1.0000 !	MISSING !	1.0000 !	1.0000 !	0.0 !

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PHYSICAL PROPERTY TABLES SECTION

FLASH CURVE TABLE: BINRY-1 (CONTINUED)

!	PRES	!	MOLEFRAC	!	MOLEFRAC	!	MOLEFRAC	!	MOLEFRAC	!	MOLEFRAC	!
!		!	LIQUID 1	!	LIQUID 1	!	LIQUID 2	!	LIQUID 2	!		!
!		!	ACROL	!	ACROL	!	H2O	!	ACROL	!	H2O	!
!		!		!		!		!		!		!
!	KPA	!		!		!		!		!		!
!		!		!		!		!		!		!
!	=====!											
!	101.0000 !	0.0 !	0.0 !	1.0000 !	MISSING !	MISSING !						
!	101.0000 !	2.0000-02 !	2.0000-02 !	0.9800 !	MISSING !	MISSING !						
!	101.0000 !	4.0000-02 !	4.0000-02 !	0.9600 !	MISSING !	MISSING !						
!	101.0000 !	6.0000-02 !	6.0000-02 !	0.9400 !	MISSING !	MISSING !						
!	101.0000 !	8.0000-02 !	8.0000-02 !	0.9200 !	MISSING !	MISSING !						
!	-----!											
!	101.0000 !	0.1000 !	0.1000 !	0.9000 !	MISSING !	MISSING !						
!	101.0000 !	0.1200 !	0.7947 !	0.2053 !	0.1092 !	0.8908 !						
!	101.0000 !	0.1400 !	0.7947 !	0.2053 !	0.1092 !	0.8908 !						
!	101.0000 !	0.1600 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.1800 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	-----!											
!	101.0000 !	0.2000 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.2200 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.2400 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.2600 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.2800 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	-----!											
!	101.0000 !	0.3000 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.3200 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.3400 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.3600 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.3800 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	-----!											
!	101.0000 !	0.4000 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.4200 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.4400 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.4600 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.4800 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	-----!											
!	101.0000 !	0.5000 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.5200 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.5400 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.5600 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.5800 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	-----!											
!	101.0000 !	0.6000 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.6200 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.6400 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.6600 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						
!	101.0000 !	0.6800 !	0.7947 !	0.2053 !	0.1091 !	0.8909 !						

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PHYSICAL PROPERTY TABLES SECTION

FLASH CURVE TABLE: BINRY-1 (CONTINUED)

! PRES	! MOLEFRAC	! MOLEFRAC	! MOLEFRAC	! MOLEFRAC	! MOLEFRAC	! MOLEFRAC	!
!	!	! LIQUID 1	! LIQUID 1	! LIQUID 2	! LIQUID 2	!	!
!	! ACROL	! ACROL	! H2O	! ACROL	! H2O	!	!
!	!	!	!	!	!	!	!
! KPA	!	!	!	!	!	!	!
!	!	!	!	!	!	!	!
! 101.0000	!	0.7000	!	0.7947	!	0.2053	!
! 101.0000	!	0.7200	!	0.7947	!	0.2053	!
! 101.0000	!	0.7400	!	0.7947	!	0.2053	!
! 101.0000	!	0.7600	!	0.7947	!	0.2053	!
! 101.0000	!	0.7800	!	0.7947	!	0.2053	!
! 101.0000	!	0.8000	!	0.8000	!	0.2000	!
! 101.0000	!	0.8200	!	0.8200	!	0.1800	!
! 101.0000	!	0.8400	!	0.8400	!	0.1600	!
! 101.0000	!	0.8600	!	0.8600	!	0.1400	!
! 101.0000	!	0.8800	!	0.8800	!	0.1200	!
! 101.0000	!	0.9000	!	0.9000	!	0.1000	!
! 101.0000	!	0.9200	!	0.9200	!	8.0000-02	!
! 101.0000	!	0.9400	!	0.9400	!	6.0000-02	!
! 101.0000	!	0.9600	!	0.9600	!	4.0000-02	!
! 101.0000	!	0.9800	!	0.9800	!	2.0000-02	!
! 101.0000	!	1.0000	!	1.0000	!	0.0	!

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PROBLEM STATUS SECTION

BLOCK STATUS

```

*****
*
* Calculations were completed normally
*
* All Unit Operation blocks were completed normally
*
* All streams were flashed normally
*
* All Utility blocks were completed normally
*
* All Convergence blocks were completed normally
*
* All Sensitivity blocks were completed normally
*
* All Property Tables were completed normally
*
* Properties estimation was completed normally
*
*****

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