

Table 1: Pure Component Properties

Component	Property	Value	Units
A	Boiling Point	442.	K
	Molecular Weight	250.48	
	Critical Temperature	653.58	K
	Critical Pressure	0.16103E+07	N/SQM
	Critical Volume	0.6760	CUM/KMOL
	Critical Compressibility Factor	0.2003	
	Vapor Pressure At TB	0.10132E+06	N/SQM
	At 0.9*TC	0.42209E+06	
	At TC	0.16103E+07	
	Acentric Factor	1.2824	
	Heat of Vap at TB	0.62857E+08	J/KMOL
	Liquid Mol Vol at TB	0.19257	CUM/KMOL
	Solubility Parameter	19281.	(J/CUM)**.5
	Ideal gas CP at 300 K	0.32267E+06	J/KMOL-K
	at 500 K	0.47868E+06	
	at 1000 K	0.69720E+06	
	Rackett equation, ZRA	0.17045	
	UNIQUAC Volume Parameter, r	11.8022	
	UNIQUAC Surface Area Parameter, q	9.908	
E	Boiling Point	416.48	K
	Molecular Weight	222.43	
	Critical Temperature	525.42	K
	Critical Pressure	0.17237E+07	N/SQM
	critical Volume	0.5401	CUM/KMOL
	Critical Compressibility Factor	0.2131	
	Vapor Pressure at TB	0.10132E+06	N/SQM
	at 0.9*TC	0.52053E+06	
	at TC	0.17237E+07	
	Acentric Factor	1.0432	
	Heat of Vap at TB	0.45471E+08	J/KMOL
	Liquid Mol Vol at TB	0.17095	CUM/KMOL
	Solubility Parameter	18156.	(J/CUM)**.5
	Ideal gas CP at 300 K	0.27867E+06	J/KMOL-K
	at 500 K	0.40862E+06	
	at 1000 K	0.59384E+06	
	Rackett equation, ZRA	0.19278	
	UNIQUAC Volume Parameter, r	9.924	
	UNIQUAC Surface Area Parameter, q	8.176	

Table 1: Pure Component Properties - contd.

I2	Boiling Point	618.27	K
	Molecular Weight	382.72	
	Critical Temperature	757.43	K
	Critical Pressure	0.10718E+07	N/SQM
	Critical Volume	1.2749	CUM/KMOL
	Critical Compressibility Factor	0.2170	
	Vapor Pressure at TB	0.10132E+06	N/SQM
	at 0.9*TC	0.33472E+06	
	at TC	0.10718E+07	
	Acentric factor	0.9688	
	Heat of Vap at TB	0.60603E+08	J/KMOL
	Liquid Mol Vol at TB	0.43351	CUM/KMOL
	Solubility Parameter	12946.	(J/CUM)**.5
	Ideal gas CP at 300 K	0.47741E+06	J/KMOL-K
	at 500 K	0.70415E+06	
	at 1000 K	0.10271E+07	
	Rackett equation, ZRA	0.19934	
	UNQUAC Volume Parameter, r	16.8535	
	UNQUAC Surface Area Parameter, q	13.371	
D	Boiling Point	752.66	K
	Molecular Weight	398.79	
	Critical Temperature	939.80	K
	Critical Pressure	0.10252E+07	N/SQM
	Critical Volume	1.7592	CUM/KMOL
	Critical Compressibility Factor	0.2308	
	Vapor Pressure at TB	0.10132E+06	N/SQM
	at 0.9*TC	0.36408E+06	
	at TC	0.10252E+07	
	Acentric Factor	0.7469	
	Heat of Vap at TB	0.66080E+08	J/KMOL
	Liquid Mol Vol at TB	0.64668	CUM/KMOL
	Solubility Parameter	11567.	(J/CUM)**.5
	Ideal gas CP at 300 K	0.49038E+06	J/KMOL-K
	at 500 K	0.72412E+06	
	at 1000 K	0.10467E+07	
	Rackett equation, ZRA	0.22028	

Table 1: Pure Component Properties - contd.

II	Boiling Point	373.97	K
	Molecular Weight	192.33	
	Critical Temperature	485.19	K
	Critical Pressure	0.21259E+07	N/SQM
	Critical Volume	0.4169	CUM/KMOL
	Critical Compressibility Factor	0.2197	
	Vapor Pressure at TB	0.10132E+06	N/SQM
	at 0.9*TC	0.68797E+06	
	at TC	0.21259E+07	
	Acentric Factor	0.9293	
	Heat of Vap at TB	0.40288E+08	J/KMOL
	Liquid Mol Vol at TB	0.13591	CUM/KMOL
	Solubility Parameter	18789.	(J/CUM)**.5
	Ideal gas CP at 300 K	0.24064E+06	J/KMOL-K
C	at 500 K	0.35527E+06	
	at 1000 K	0.52282E+06	
	Rackett equation, ZRA	0.20362	
	Boiling Point	336.57	K
	Molecular Weight	190.40	
	Critical Temperature	494.01	K
	Critical Pressure	0.30423E+07	N/SQM
	Critical Volume	0.5015	CUM/KMOL
	Critical Compressibility Factor	0.3715	
	Vapor Pressure at TB	0.10131E+06	N/SQM
	at 0.9*TC	0.13574E+07	
	at TC	0.30423E+07	
	Acentric Factor	0.3490	
	Heat of Vap at TB	0.29323E+08	J/KMOL
	Liquid Mol Vol at TB	0.13159	CUM/KMOL
	Solubility Parameter	15277.	(J/CUM)**.5
	Ideal gas CP at 300 K	0.20487E+06	J/KMOL-K
	at 500 K	0.33357E+06	
	at 1000 K	0.53086E+06	
	Rackett equation, ZRA	0.25857	

Table 1: Pure Component Properties - contd.

R2	Boiling Point	346.00	K
	Molecular Weight	134.33	
	Critical Temperature	512.55	K
	Critical Pressure	0.31036E+07	N/sqm
	Critical Volume	0.3775	CUM/KMOL
	Critical Compressibility Factor	0.2749	
	Vapor Pressure at TB	0.10132E+06	N/SQM
	at 0.9*TC	0.14084E+07	
	at TC	0.31036E+07	
	Acentric factor	0.3174	
	Heat of Vap at TB	0.29694E+08	J/KMOL
	Liquid Mol Vol at TB	0.13578	CUM/KMOL
	Solubility Parameter	15305.	(J/CUM)**.5
	Ideal gas CP at 300 K	0.15815E+06	J/KMOL-K
	at 500 K	0.23977E+06	
	at 1000 K	0.35377E+07	
	Rackett equation, ZRA	0.26156	
R1	Boiling Point	370.00	K
	Molecular Weight	58.08	
	Critical Temperature	545.	K
	Critical Pressure	0.57147E+07	N/SQM
	Critical Compressibility Factor	0.2560	
	Acentric Factor	0.6300	
	Heat of Vap at TB	0.39984E+08	J/KMOL
	Liquid Mol Vol at TB	0.07614	CUM/KMOL
	Solubility Parameter	25679.	(J/CUM)**.5
	Rackett equation, ZRA	0.25665	
	UNIQUAC Volume Parameter, r	3.0198	
	UNIQUAC Surface Area Parameter, q	2.9160	

Table 1: Pure Component Properties - contd.

MeOH	Boiling Point	337.80	K
	Molecular Weight	32.042	
	Critical Temperature	512.60	K
	Critical Pressure	0.80959E+07	N/sqm
	Critical Compressibility factor	0.2240	
	Acentric factor	0.5590	
	Heat of Vap at TB	0.35278E+08	J/KMOL
	Liquid Mol Vol at TB	0.04350	CUM/KMOL
	Solubility Parameter	29669.	(J/CUM)**.5
	Rackett equation, ZRA	0.23768	
	UNQUAC Volume Parameter, r	1.4311	
	UNQUAC Surface Area Parameter, q	1.4320	
Toluene	Boiling Point	383.80	K
	Molecular Weight	92.141	
	Critical Temperature	591.70	K
	Critical Pressure	0.41138E+07	N/SQM
	Critical Compressibility Factor	0.2640	
	Acentric Factor	0.2570	
	Heat of Vap at TB	0.333201E+08	J/KMOL
	Liquid Mol Vol at TB	0.11833	CUM/KMOL
	Solubility Parameter	18272.	(J/CUM)**.5
	Rackett equation, ZRA	0.26498	
	UNQUAC Volume Parameter, r	3.9228	
	UNQUAC Surface Area Parameter, q	2.9680	
H2O	Boiling Point	373.20	K
	Molecular Weight	18.015	
	Critical Temperature	647.30	K
	Critical Pressure	0.22048E+08	N/SQM
	Critical Compressibility factor	0.2290	
	Acentric factor	0.3440	
	Heat of Vap at TB	0.40683E+08	J/KMOL
	Liquid Mol Vol at TB	0.01964	CUM/KMOL
	Solubility Parameter	48146.	(J/CUM)**.5
	Rackett equation, ZRA	0.24317	

Table 2: Temperature Dependent Properties

Coef.	A	E	I2	D	I1	C
$A_1$	-20884.	1143.0	-6784.0	-24284.	-657.00	-0.13542E+06
$A_2$	1400.3	1113.1	1941.7	2095.6	961.38	1522.7
$A_3$	-0.92240	-0.67220	-1.1714	-1.3704	-0.56020	-1.4824
$A_4$	0.24E-03	0.15E-03	0.26E-03	0.34E-03	0.12E-03	0.62E-03
$A_5$	0.	0.	0.	0.	0.	0.
$A_6$	0.	0.	0.	0.	0.	0.
$A_7$	280.00	280.00	280.00	280.00	280.00	280.00
$A_8$	1100.0	1100.0	1100.0	1100.0	1100.0	1100..0
$A_9$	36029.	36029.	36029.	36029.	36029.	36029
$A_{10}$	57.226	48.538	88.532	91.050	40.822	25.582
$A_{11}$	1.5000	1.5000	1.5000	1.5000	1.5000	1.5427
$B_1$	160.00	128.43	127.31	106.49	115.72	61.623
$B_2$	-17059.	-11654.	-16097.	-16630.	-9833.5	-5620.8
$B_3$	0.	0.	0.	0.	0.	0.
$B_4$	0.	0.	0.	0.	0.	0.
$B_5$	-18.041	-14.768	-13.991	-11.021	-13.169	-5.7449
$B_6$	0.93E-17	0.29E-16	0.31E-17	0.71E-18	0.43E-16	0.21E-16
$B_7$	6.0000	6.0000	6.0000	6.0000	6.0000	6.0000
$B_8$	532.00	416.48	618.27	752.66	373.97	336.57
$B_9$	653.58	525.42	757.43	939.80	485.19	494.01

Table 2: Temperature Dependent Properties - contd.

Coef.	R1	R2	H2O	MeOH	Toluene
$A_1$	-1105.3	-29644.	33738.	21152.	-24355.
$A_2$	314.64	783.51	-7.0176	70.924	512.46
$A_3$	-0.20319	-0.57862	0.27296E-01	0.25870E-01	-0.27654
$A_4$	0.53214E-04	0.17853E-03	-0.16647E-04	-0.28516E-04	0.49111E-04
$A_5$	0.	0.	0.	0.	0.
$A_6$	0.	0.	0.	0.	0.
$A_7$	300.00	280.00	200.00	300.00	300.00
$A_8$	1272.8	1100.0	3000.0	1261.8	1665.4
$A_9$	33256.	36029.	33256.	33256.	33256.
$A_{10}$	8.3101	23.961	0.18978E-19	0.37813E-01	13.965
$A_{11}$	1.5000	1.5000	9.2846	2.2014	1.5000
$B_1$	100.41	58.959	65.154	58.710	71.277
$B_2$	-8482.7	-5591.9	-6842.9	-6364.7	-6413.3
$B_3$	0.	0.	0.	0.	0.
$B_4$	0.43966E-02	0.0	0.27835E-02	-0.23901E-02	0.41663E-02
$B_5$	-11.435	-5.3538	-6.1364	-4.7344	-7.5054
$B_6$	0.13959E-16	0.16714E-16	0.33117E-17	0.20888E-16	0.54200E-17
$B_7$	6.0000	6.0000	6.0000	6.0000	6.0000
$B_8$	318.00	346.00	319.27	288.67	318.72
$B_9$	545.00	512.55	647.30	512.60	591.70

Table 3: Binary Wilson Parameters

Component i	Component j	$a_{ij}$	$b_{ij}$
A	Toluene	1.625	-2087
Toluene	A	1.226	-265.5
A	E	-182.6	0
E	A	0	0
A	R1	0.2196	-1134
R1	A	1.079	38.64
A	I2	0.06673	0
I2	A	-0.5559	0
A	MeOH	-0.0520	-1306
MeOH	A	1.558	-80.24
A	H2O	-4.377	-2937
H2O	A	-0.1479	168.5
A	D	0	0
D	A	0	0
A	I1	0	0
I1	A	0	0
A	C	2.994	-1256.7
C	A	-2.082	865.10
Toluene	E	0.8763	-91.69
E	Toluene	-0.1774	-503.7
Toluene	R1	-0.3745	82.62
R1	Toluene	0.4545	-672.7
Toluene	I2	1.4980	-236.9
I2	Toluene	3.1440	-3440
Toluene	MeOH	-1.1440	-25.53
MeOH	Toluene	-0.7929	-801.4
Toluene	H2O	0	0
H2O	Toluene	0	0
Toluene	D	1.581	-265.8
D	Toluene	4.567	-3915
Toluene	I1	0	0
I1	Toluene	0	0
Toluene	C	0.9163	-118.064
C	Toluene	-0.5263	-172.32



Table 3: Binary Wilson Parameters - contd.

Component i	Component j	$a_{ij}$	$b_{ij}$
E	R1	0.9424	131.6
R1	E	-1.2550	-441.7
E	I2	0	0
I2	E	-25.24	0
E	MeOH	-1.3440	-1.655
MeOH	E	1.1160	-122.4
E	H2O	-6.273	-1411
H2O	E	-0.5128	61.36
E	D	0	0
D	E	-179.4	0
E	I1	0	0
I1	E	0	0
E	C	-2.175	-2.175
C	E	-4.048	-4.048
R1	I2	0.9573	-23.51
I2	R1	2.2540	-2886
R1	MeOH	0.3904	-370.7
MeOH	R1	-0.3265	277.1
R1	H2O	-2.6976	342.36
H2O	R1	0.6033	-573.14
R1	D	1.313	-21.11
D	R1	2.877	-2815
R1	I1	0	0
I1	R1	0	0
R1	C	-3.092	1607
C	R1	1.491	-196.98
I2	MeOH	1.9570	-3513
MeOH	I2	1.6720	-239.6
I2	H2O	0	0
H2O	I2	0	0

Table 3: Binary Wilson Parameters - contd.

Component i	Component j	$a_{ij}$	$b_{ij}$
I2	D	0	0
D	I2	0	0
I2	I1	0	0
I1	I2	0	0
I2	C	0	0
C	I2	0	0
MeOH	H2O	-2.030	807.62
H2O	MeOH	0.049	-39.55
MeOH	D	1.845	-160.4
D	MeOH	2.669	-3136
MeOH	I1	0	0
I1	MeOH	0	0
MeOH	C	13.55	-5112.68
C	MeOH	3.788	-1603.07
H2O	D	-0.022	72.18
D	H2O	-5.526	-5702
H2O	I1	0	0
I1	H2O	0	0
H2O	C	0	0
C	H2O	0	0