

Appendix-B

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Table B.1-Continued.

Appendix-B

$(P_v/T)_t = (P_v/T)_b$
 $T_b - T_t = 5\text{ C}$

Date	D Time (s)	D mass t (g)	D mass b (g)	T_t (C)	ϕ_t (%)	T_b (C)	ϕ_b (%)	T_{amb} (C)	$Dp = p_b - p_t$ (in. H ₂ O)	P_{atm} (in. Hg)	η''_t (kg/m ² sec)	η''_b (kg/m ² sec)	mean η'' (kg/m ² sec)
1/13/98	84600	0.073	-0.057	25.00	45.04	30.00	34.02	25.00	0.005	-	5.910E-09	-4.615E-09	5.262E-09
1/14/98	86400	0.043	-0.101	25.00	44.99	29.99	33.99	23.90	0.005	-	3.409E-09	-8.007E-09	5.708E-09
1/15/98	86400	0.051	-0.11	24.99	45.07	30.00	34.00	22.50	0.005	-	4.043E-09	-8.720E-09	6.382E-09
1/16/98	87600	0.061	-0.111	25.00	45.07	30.00	34.00	24.50	0.005	-	4.770E-09	-8.679E-09	6.724E-09
1/17/98	89700	0.057	-0.129	24.99	45.01	30.02	34.05	24.30	0.005	-	4.352E-09	-9.850E-09	7.101E-09

Equal Vapor Pressure
 $T_b - T_t = 10\text{ C}$

1/23/98	90000	0.064	-0.066	25.05	45.02	35.07	25.41	24.50	0.005	-	4.871E-09	-5.023E-09	4.947E-09
1/24/98	89100	0.088	-0.05	25.01	45.02	35.07	25.27	25.00	0.005	-	6.765E-09	-3.844E-09	5.304E-09
1/25/98	86400	0.037	-0.097	24.95	45.02	35.08	25.18	25.00	0.005	-	2.933E-09	-7.690E-09	5.311E-09
1/26/98	82800	0.032	-0.105	24.96	45.01	35.08	25.22	24.00	0.005	-	2.647E-09	-8.686E-09	5.666E-09
1/27/98	84600	0.033	-0.099	24.96	45.02	35.06	25.22	26.20	0.005	28.08	2.672E-09	-8.015E-09	5.343E-09
1/28/98	87300	0.055	-0.091	24.96	45.02	35.09	25.20	24.50	0.005	27.76	4.315E-09	-7.140E-09	5.727E-09
1/29/98	81900	0.048	-0.108	24.97	44.96	35.10	25.20	24.60	0.005	27.9	4.014E-09	-9.032E-09	6.523E-09

$(P_v/T)_t = (P_v/T)_b$
 $T_b - T_t = 10\text{ C}$

1/31/98	88800	0.039	-0.205	24.95	45.04	35.01	26.11	26.00	0.005	27.84	3.008E-09	-1.581E-08	9.410E-09
2/1/98	95400	0.055	-0.057	24.95	45.09	35.01	26.06	26.50	0.005	28	3.949E-09	-4.092E-09	4.021E-09
2/2/98	81000	0.05	-0.183	24.97	45.05	35.01	26.11	26.00	0.005	28.1	4.228E-09	-1.547E-08	9.851E-09
2/3/98	81300	0.067	-0.164	24.98	45.06	34.99	26.17	24.60	0.005	28.14	5.645E-09	-1.382E-08	9.731E-09
2/5/98	81120	0.074	-0.127	24.97	45.06	35.00	26.05	24.50	0.005	28.04	6.248E-09	-1.072E-08	8.486E-09
2/6/98	84480	0.074	-0.162	24.97	44.97	35.01	26.06	24.80	0.005	28.08	6.000E-09	-1.313E-08	9.567E-09
2/8/98	182400	0.128	-0.311	24.96	44.97	35.00	26.05	23.80	0.005	27.6	4.807E-09	-1.168E-08	8.242E-09
2/9/98	76800	0.041	-0.024	24.97	45.00	34.98	26.09	23.10	0.005	27.85	3.657E-09	-2.140E-09	2.898E-09
2/10/98	86400	0.046	-0.179	24.98	45.04	34.97	26.16	23.30	0.005	27.9	3.647E-09	-1.419E-08	8.918E-09

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2/23/98	75000	0.294	-0.188	25.05	45.05	34.96	31.92	23.40	0.008	27.66	2.685E-08	-1.717E-08	2.201E-08
2/25/98	85620	0.319	-0.337	25.08	45.00	35.01	31.87	23.00	0.005	27.96	2.552E-08	-2.696E-08	2.624E-08
2/28/98	91200	0.425	-0.446	25.08	44.98	35.00	31.89	23.80	0.004	27.77	3.192E-08	-3.350E-08	3.271E-08
3/1/98	85500	0.379	-0.571	25.08	44.97	35.00	31.86	24.30	0.005	27.78	3.036E-08	-4.574E-08	3.805E-08
3/2/98	81000	0.338	-0.246	25.09	45.00	35.01	31.92	23.00	0.005	27.68	2.858E-08	-2.080E-08	2.469E-08
3/3/98	95100	0.399	-0.555	25.07	45.00	34.97	31.91	22.80	0.009	27.7	2.874E-08	-3.997E-08	3.435E-08

Table B.1-Continued.

Appendix-B

	Date	D Time (s)	D mass <i>t</i> (g)	D mass <i>b</i> (g)	T _t (C)	φ _t (%)	T _b (C)	φ _b (%)	T _{amb} (C)	Dp= p _b -p _t (in. H ₂ O)	Patm (in. Hg)	η" _t (kg/m ² sec)	η" _b (kg/m ² sec)	mean η" (kg/m ² sec)
Test No. 9														
	3/16/98	69000	-0.091	0.078	25.04	44.98	35.04	22.78	23.10	-0.02	28.36	-9.033E-09	7.743E-09	-8.388E-09
	3/17/98	97500	-0.134	0.079	25.05	44.89	35.04	22.78	23.00	-0.025	28.28	-9.413E-09	5.550E-09	-7.482E-09
	3/18/98	75000	-0.115	0.044	25.05	44.82	35.04	22.77	23.80	-0.028	28.14	-1.050E-08	4.018E-09	-7.260E-09
Test No. 10														
	3/26/98	85500	-0.331	0.18	24.94	45.03	34.98	22.82	23.90	-0.022	28.36	-2.652E-08	1.442E-08	-2.047E-08
	3/27/98	91200	-0.309	0.209	24.04	44.95	35.02	22.81	23.70	-0.024	23.21	-2.321E-08	1.570E-08	-1.945E-08
	3/28/98	95700	-0.314	0.221	25.05	44.97	35.03	22.79	22.70	-0.02	28	-2.247E-08	1.582E-08	-1.915E-08
	3/29/98	85800	-0.31	0.186	25.05	45.07	35.03	22.77	23.90	-0.022	28.04	-2.475E-08	1.485E-08	-1.980E-08
	3/30/98	78000	-0.261	0.164	25.03	44.99	35.03	22.76	23.90	-0.018	28.05	-2.292E-08	1.440E-08	-1.866E-08
Test No. 11														
	4/6/98	87900	0	-0.126	35.08	25.23	25.04	45.06	23.60	-0.0105	27.91	0.000E+00	-9.818E-09	4.909E-09
	4/7/98	81600	0.004	-0.112	35.07	25.24	25.06	45.07	23.50	-0.008	27.95	3.358E-10	-9.401E-09	4.868E-09
	4/8/98	87300	0.016	-0.099	35.11	25.21	25.11	45.03	22.80	-0.011	27.86	1.255E-09	-7.767E-09	4.511E-09
Test No. 12														
	5/8/98	69900	-0.046	-0.043	5.05	45.02	10.02	31.95	24.30	-	-	-4.507E-09	-4.213E-09	4.360E-09
	5/9/98	92100	-0.051	-0.021	5.06	45.10	10.02	32.04	24.35	-	-	-3.793E-09	-1.562E-09	2.677E-09
	5/10/98	76200	-0.042	-0.034	5.05	45.15	10.01	32.05	25.20	-	-	-3.775E-09	-3.056E-09	3.416E-09
	5/11/98	90000	-0.042	-0.033	5.05	45.24	10.00	32.09	23.80	-	-	-3.196E-09	-2.511E-09	2.854E-09
	5/12/98	95400	-0.05	-0.039	5.06	44.87	10.01	32.05	24.40	-	-	-3.590E-09	-2.800E-09	3.195E-09

Table B.2 Cup test experimental data.

T = 25.1 C

Psat(T) = 3.186 kPa

A = 0.01204 m²

Date	Time (hr)	Cup I (g)	Cup II (g)	Cup IV (g)	T _{amb} (C)
11/20/97	0	995.84	852.94	882.98	25.2
11/27/97	35761	995.91	853.17	883.84	25.6
12/4/97	71529	996.12	853.38	884.28	25.7
12/11/97	107304	996.37	853.55	884.64	24.0
12/24/97	143092	996.75	853.88	885.2	25.3
1/1/98	178888	997.06	854.13	885.59	24.4
1/8/98	214691	997.30	854.32	885.93	25.3
1/16/98	250502	997.57	854.54	886.25	25.1
1/24/98	286321	997.86	854.73	886.58	25.0

Mean R.H.	16.98	38	79.92
R.H. Difference	11.37	10.31	9.18
Rf (Pa-sec-m ² /kg)	4.87E+08	5.23E+08	4.27E+08
WVT (kg/sec)	3.839E-10	3.142E-10	5.486E-10
μ (kg/m-sec-Pa)	8.805E-13	7.95E-13	1.5588E-12

A : Surface area of the specimen
Rf : Water-vapor transfer resistance
WVT : Water-vapor transfer rate
μ : Permeance

$$m = \frac{1}{\frac{AP_{sat} (f_u - f_l)}{WVT} - Rf}$$