

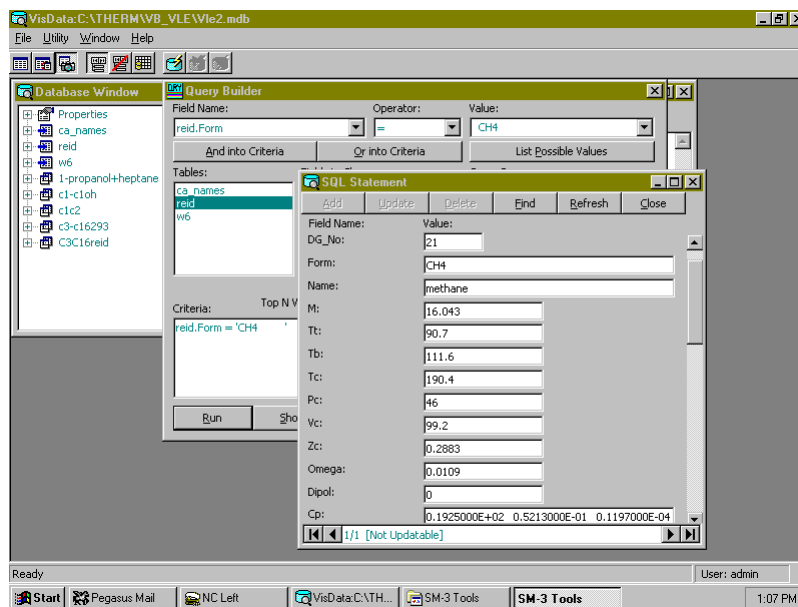
## Anexa 1

**Coefficienții  $m$ ,  $\alpha_C$  ai ecuației de stare GEOS și datele critice pentru 75  
substanțe uzuale extrase din baza de date PURPROP**  
Coefficienții au fost obținuți prin optimizare pe curba de saturație

Nr.	Componentul	$\alpha_C$	$m$	$T_C$ (K)	$P_C$ (bar)	$V_C$ (cm <sup>3</sup> /mol)
1.	amoniac	7.609	0.3035	405.4	113.33	72.46
2.	argon	5.9084	0.1378	150.9	48.98	74.57
3.	CO <sub>2</sub>	7.0517	0.3146	304.2	73.83	94.44
4.	helium	3.9511	-0.3933	5.2	2.27	57.48
5.	apa	8.0725	0.3516	647.3	220.9	56.83
6.	hidrogen	4.7855	-0.1322	33	12.93	64.14
7.	metan	5.9986	0.1571	190.6	45.95	98.92
8.	etan	6.3774	0.2596	305.3	48.71	147.06
9.	propan	6.7138	0.2984	369.9	42.47	200
10.	<i>i</i> -butan	6.7918	0.338	408.1	36.48	262.81
11.	<i>n</i> -butan	7.0239	0.2973	425.2	37.97	254.68
12.	<i>i</i> -pentan	7.218	0.3045	460.4	33.81	306
13.	<i>n</i> -pentan	7.3364	0.3254	469.8	33.76	310.88
14.	<i>n</i> -hexan	7.584	0.3918	507.9	30.32	368.45
15.	CH <sub>3</sub> Cl	6.8192	0.2152	416.2	66.79	139.09
16.	fluor	6.1519	0.217	144.3	52.15	66.23
17.	N <sub>2</sub> O	6.7653	0.1962	309.6	72.54	97.27
18.	SO <sub>2</sub>	7.2487	0.3	430.6	78.84	122.02
19.	H <sub>2</sub> S	6.4248	0.1913	373.3	90.06	97.69
20.	freon-21	7.0896	0.3343	451.4	51.81	196.04
21.	NF <sub>3</sub>	6.369	0.322	234	44.61	126.26
22.	etilenă	6.3947	0.2494	282.3	50.4	130.73
23.	propilenă	6.7157	0.2116	364.6	46.01	182.4
24.	1-butena	6.8655	0.2743	420.4	40.55	240.32
25.	propina	6.9902	0.2909	402.4	56.28	163.6
26.	benzen	7.0847	0.3317	562.6	49.24	256.98
27.	ciclopropan	6.6288	0.1992	398.3	55.79	162.79
28.	neon	5.6612	0.1204	44.4	26.54	41.79
29.	azot	6.1145	0.1944	126.2	34	89.21
30.	oxigen	6.0307	0.1856	154.6	50.43	73.37
31.	CO	6.0688	0.2387	132.9	34.99	93.06
32.	metanol	9.5822	0.4468	513.1	79.71	117.71
33.	etanol	9.3121	0.6146	516.2	63.95	167.22
34.	propanol	9.2368	0.597	536.8	50.61	219.81
35.	acetonitril	9.0743	0.1593	547.8	48.3	173.15
36.	acetona	7.8792	0.3187	508.1	47.58	216.72
37.	acetilenă	6.9621	0.2969	308.7	62.47	112.9
38.	<i>n</i> -heptan	7.9129	0.382	540	27.2	428.04
39.	<i>n</i> -octan	8.1067	0.4253	569.3	24.93	490.9

## Anexa 1 (continuare)

40.	C <sub>2</sub> H <sub>5</sub> Cl	7.026	0.2811	460.1	52.28	194.91
41.	C <sub>2</sub> eter	7.5181	0.3298	466.9	35.99	282.37
42.	acid acetic	9.6246	0.2827	594.7	57.97	171.28
43.	freon11	6.8671	0.3374	471.1	43.74	247.51
44.	freon12	6.8147	0.3284	385	41.24	217
45.	freon13	6.7817	0.3318	302	39.21	180.01
46.	freon22	7.1798	0.3321	369.2	49.75	165
47.	CF <sub>4</sub>	6.8642	0.3147	227.5	37.42	140
48.	CCl <sub>4</sub>	7.0227	0.2851	556.3	45.6	275.87
49.	clor	6.3839	0.1708	417	77.01	124
50.	HCl	6.7466	0.2145	324.6	82.68	85.99
51.	SO <sub>3</sub>	8.0985	0.4193	491.4	84.71	127.08
52.	fosfina	6.4227	0.1069	324.1	64.85	113.33
53.	fosgen	6.8673	0.3461	455.1	56.74	190.22
54.	C1mercaptan	6.6225	0.2317	469.9	72.35	148.94
55.	C1formiat	7.5113	0.2966	487.1	59.93	172.12
56.	di-C1eter	7.1252	0.2926	400	52.69	169.75
57.	di-C1sulfura	6.9764	0.2509	503	55.32	203.04
58.	C <sub>2</sub> mercaptan	6.9279	0.2769	498.6	54.92	206.41
59.	C <sub>2</sub> formiat	7.6094	0.324	508.4	47.27	229.21
60.	C1acetat	7.8499	0.3557	506.8	46.92	227.8
61.	C <sub>3</sub> formiat	7.7285	0.3594	538	40.66	284.86
62.	C1propionat	7.9555	0.3795	530.5	39.86	282.03
63.	C <sub>2</sub> acetat	8.0584	0.3784	523.2	38.3	286.34
64.	di-C <sub>2</sub> S	7.0861	0.375	556.9	39.62	323.24
65.	di-C <sub>2</sub> amina	7.4168	0.3336	496.6	36.68	297.31
66.	C <sub>3</sub> acetat	8.178	0.4015	549.3	33.35	345.4
67.	C <sub>2</sub> propionat	8.1536	0.4119	546	33.47	344.47
68.	C1butirat	8.0809	0.4042	554.4	34.64	340.22
69.	C1isobutirat	7.9673	0.3943	540.7	34.17	339.09
70.	C <sub>2</sub> C <sub>3</sub> eter	7.6009	0.367	500.5	32.53	341.67
71.	ciclohexan	7.01	0.3228	554.1	41.11	311.37
72.	F-benzen	7.386	0.3044	559.6	45.2	271.4
73.	Cl-benzen	7.3623	0.3254	632.3	45.2	308.04
74.	Br-benzen	7.3732	0.3176	670.1	45.2	323.13
75.	I-benzen	7.3188	0.335	721.1	45.2	350.9



Proprietăți fizico-chimice ale metanului. Imagine captată din baza de date PURPROP.

**Anexa 2**  
**Parametrii ecuației de stare GEOS3C**  
 Datele critice sunt cele din Anexa 1

Nr	Component	$C_1$	$C_2$	$C_3$	$\alpha_c$	$Z_c$	$\omega$
1.	amoniac	0.1918	0.944	-1.0093	7.0695	0.2436	0.256
2.	argon	0.1072	0.1153	0.5692	5.7869	0.2912	-0.004
3.	CO <sub>2</sub>	0.2854	0.0713	3.0523	6.9173	0.2757	0.225
4.	heliu	-0.4046	-0.1131	0.026	3.9008	0.3024	-0.387
5.	apa	0.2447	1.1367	-1.4917	7.5027	0.2333	0.344
6.	hidrogen	-0.1462	0.0318	-0.1867	4.7272	0.3024	-0.219
7.	metan	0.1205	0.2193	0.1047	5.8573	0.2869	0.010
8.	etan	0.2408	0.3122	-0.0715	6.2909	0.2822	0.098
9.	propan	0.2597	0.4321	-0.1524	6.5549	0.2762	0.151
10.	<i>i</i> -butan	0.3207	0.3058	0.3284	6.7195	0.2826	0.185
11.	<i>n</i> -butan	0.2454	0.4714	0.4147	6.7906	0.2736	0.199
12.	<i>i</i> -pentan	0.2424	0.6197	0.0611	6.9145	0.2703	0.224
13.	<i>n</i> -pentan	0.2638	0.6136	0.1837	7.0484	0.2687	0.252
14.	<i>n</i> -hexan	0.3246	0.729	-0.4254	7.2822	0.2646	0.299
15.	CH <sub>3</sub> Cl	0.1656	0.6603	-0.4883	6.5771	0.2684	0.156
16.	fluor	0.1898	0.2552	-0.001	6.0526	0.2879	0.050
17.	N <sub>2</sub> O	0.1630	0.195	3.2623	6.5968	0.2742	0.160
18.	SO <sub>2</sub>	0.2579	0.6255	-0.0171	7.0454	0.2687	0.251
19.	H <sub>2</sub> S	0.1651	0.2021	1.4743	6.3010	0.2834	0.100
20.	freon-21	0.2698	0.5518	-0.133	6.8267	0.2706	0.207
21.	NF <sub>3</sub>	0.3353	0.1375	0.32	6.4202	0.2895	0.124
22.	etilena	0.2038	0.316	0.0523	6.2363	0.2807	0.087
23.	propilena	0.1764	0.4776	0.308	6.5376	0.2769	0.148
24.	1-butena	0.2459	0.2491	1.8757	6.7299	0.2788	0.187
25.	propină	0.2696	0.1972	3.0929	6.8827	0.2752	0.218
26.	benzen	0.2674	0.5043	0.0923	6.8270	0.2705	0.207
27.	ciclopropan	0.2988	-2.5707	15.2432	7.1095	0.2743	0.264
28.	neon	0.1536	-0.4459	1.6741	5.8080	0.3004	0
29.	azot	0.1590	0.2035	0.2925	5.9805	0.2891	0.035
30.	oxigen	0.1524	0.2433	-0.0128	5.9174	0.2879	0.022
31.	CO	0.2267	0.0328	0.7767	6.0355	0.2946	0.046
32.	metanol	0.2713	2.0603	-3.7853	8.5528	0.2199	0.557
33.	etanol	0.5431	1.4614	-2.1928	8.9374	0.2491	0.635
34.	propanol	0.5064	0.2591	5.1789	8.8227	0.2493	0.611
35.	acetonitril	-0.0766	2.079	-3.9465	7.4394	0.1836	0.331
36.	acetona	0.2118	1.1052	-1.1924	7.3314	0.2441	0.309
37.	acetilena	0.2460	0.64	-0.6829	6.7260	0.2748	0.186
38.	<i>n</i> -heptan	0.3069	0.9648	-0.7954	7.5384	0.2593	0.351
39.	<i>n</i> -octan	0.3527	1.122	-1.7614	7.7504	0.2585	0.394
40.	C <sub>2</sub> H <sub>5</sub> Cl	0.2210	0.5444	0.0221	6.7523	0.2664	0.192
41.	C <sub>2</sub> eter	0.2557	0.6151	0.6524	7.1646	0.2618	0.275

<i>Anexa 2 (continuare)</i>						
42. acid acetic	0.0363	2.1996	-3.8461	8.0037	0.2008	0.445
43. freon11	0.3053	0.3735	0.1305	6.7348	0.2764	0.188
44. freon12	0.2974	0.3584	0.1753	6.6895	0.2796	0.179
45. freon13	0.3059	0.3758	-0.0022	6.6801	0.2811	0.177
46. freon22	0.2594	0.5916	-0.191	6.8895	0.2674	0.219
47. CF <sub>4</sub>	0.2743	0.4647	-0.1832	6.6941	0.277	0.180
48. CCl <sub>4</sub>	0.2289	0.5033	0.2636	6.7640	0.272	0.194
49. clor	0.1235	0.3837	0.2288	6.1679	0.2754	0.073
50. HCl	0.1474	0.6006	-0.5594	6.4361	0.2634	0.127
51. SO <sub>3</sub>	0.3865	-0.2414	6.6034	7.9367	0.2634	0.432
52. fosfina	0.0289	0.6308	-0.8513	6.0464	0.2727	0.048
53. fosgen	0.3331	-0.075	2.9569	6.8156	0.2852	0.204
54. C1mercaptan	0.2144	0.1174	2.1446	6.5368	0.2758	0.148
55. C1formiat	0.2038	0.6601	0.5212	7.0631	0.2547	0.255
56. di-C1eter	0.2259	0.3766	1.1399	6.8259	0.2689	0.206
57. di-C1sulfura	0.1966	1.2034	-4.5866	6.7075	0.2686	0.182
58. C <sub>2</sub> mercaptan	0.2448	0.0888	3.5623	6.7725	0.2734	0.196
59. C <sub>2</sub> formiat	0.2385	0.5945	0.9847	7.1976	0.2563	0.282
60. C1acetat	0.2653	0.8297	0.0162	7.4051	0.2537	0.324
61. C <sub>3</sub> formiat	0.2823	0.7524	0.1546	7.3550	0.2589	0.314
62. C1propionat	0.2933	0.8256	0.1505	7.5305	0.2549	0.349
63. C <sub>2</sub> acetat	0.2858	0.9138	-0.0673	7.5959	0.2521	0.363
64. di-C <sub>2</sub> S	0.3928	-1.4465	15.4422	7.1587	0.2766	0.274
65. di-C <sub>2</sub> amina	0.3062	-0.5678	9.5169	7.2835	0.2641	0.299
66. C <sub>3</sub> acetat	0.3142	0.9675	-0.2273	7.7369	0.2522	0.391
67. C <sub>2</sub> propionat	0.3277	1.0209	-0.7497	7.7310	0.2539	0.390
68. C1butirat	0.3211	1.0297	-0.8731	7.6669	0.2557	0.377
69. C1isobutirat	0.3172	0.8458	-0.0332	7.5884	0.2577	0.361
70. C <sub>2</sub> C <sub>3</sub> eter	0.3037	0.9517	-1.4434	7.2973	0.267	0.302
71. ciclohexan	0.2871	0.3117	0.9721	6.8581	0.2778	0.213
72. F-benzen	0.2372	0.6121	0.2401	7.0638	0.2636	0.255
73. Cl-benzen	0.2587	0.7805	-0.6981	7.0488	0.2648	0.252
74. Br-benzen	0.2463	0.7171	-0.29	7.0362	0.2621	0.249
75. I-benzen	0.2730	0.5955	0.0986	7.0300	0.2645	0.248

### Anexa 3

#### Baza de date PVTDATA1 (date PVT pentru componenți puri)

Datele critice sunt cele din Anexa 1

Nr	Component	N-2P	N-1P	$T_r$ ,min	$T_r$ ,max	$P_r$ ,min	$P_r$ ,max
1	amoniac	57	188	0.486	1.875	0.00061	44.118
2	argon	67	209	0.557	7.292	0.002	20.417
3	CO <sub>2</sub>	46	178	0.712	3.616	0.0013	13.456
4	heliu	60	192	0.419	269.1	0.0044	307.69
5	apa	84	205	0.422	2.43	2.8E-5	6.338
6	hidrogen	20	276	0.418	48.52	0.0054	77.351
7	metan	51	317	0.476	3.149	0.0025	152.34
8	etan	41	317	0.328	1.965	2E-6	14.37
9	propan	48	314	0.351	1.893	4E-6	16.48
10	<i>i</i> -butan	28	166	0.626	3.348	0.0019	5.67
11	<i>n</i> -butan	28	170	0.641	3.214	0.0018	6.356
12	<i>i</i> -pentan	27	82	0.654	1.303	0.029	8.99
13	<i>n</i> -pentan	30	164	0.658	2.909	0.002	7.15
14	<i>n</i> -hexan	43	146	0.538	1.159	0.002	7.96
15	CH <sub>3</sub> Cl	22	181	0.74	1.197	0.015	4.73
16	fluor	47	288	0.371	2.079	4.8E-5	3.835
17	N <sub>2</sub> O	14	208	0.785	1.367	0.084	4.4
18	SO <sub>2</sub>	22	250	0.75	1.215	0.013	4.048
19	H <sub>2</sub> S	14	219	0.744	1.19	0.001	7.657
20	freon-21	33	96	0.472	1.048	0.00049	1
21	NF <sub>3</sub>	26	288	0.449	2.137	0.00045	11.209
22	etilenă	44	251	0.368	1.417	2.4E-5	7.936
23	propilena	13	176	0.761	1.402	0.075	14.988
24	1-butena	14	134	0.74	1.057	0.085	17.007
25	propină	17	210	0.803	1.176	0.1269	5.625
26	benzen	46	130	0.498	1.066	0.0011	10.154
27	ciclopropan	21	199	0.736	1.188	0.027	5.6666
28	neon	20	157	0.563	6.757	0.0037	7.536
29	azot	36	317	0.5	8.716	0.0037	294.12
30	oxigen	29	264	0.352	2.588	2.9E-5	23.795
31	CO	28	181	0.513	5.064	0.0029	40.015
32	metanol	28	0	0.532	1	0.00049	1
33	etanol	26	0	0.529	1	0.00049	1
34	propanol	20	0	0.658	1	0.0099	1
35	acetoneitril	11	131	0.544	1.32	0.0026	51.76
36	acetona	21	0	0.648	1	0.021	1
37	acetilena	17	102	0.623	1.037	0.0016	1.135
38	<i>n</i> -heptan	17	47	0.691	1	0.039	13.095
39	<i>n</i> -octan	20	66	0.655	1	0.019	12.193
40	C <sub>2</sub> H <sub>5</sub> Cl	19	0	0.62	1	0.019	1
41	C <sub>2</sub> eter	19	0	0.659	1	0.028	1
42	acid acetic	--	33	0	0.493	1	2.7E-4

## Anexa 3 (continuare)

43	freon11	29	0	0.495	1	0.0011	1
44	freon12	35	0	0.528	1	0.003	1
45	freon13	35	0	0.441	1	0.00022	1
46	freon22	27	0	0.469	1	0.00041	1
47	CF <sub>4</sub>	17	0	0.394	1	2.9E-5	1
48	CCl <sub>4</sub>	22	0	0.635	1	0.024	1
49	clor	16	0	0.655	1	0.048	1
50	HCl	16	0	0.579	1	0.012	1
51	SO <sub>3</sub>	14	0	0.719	1	0.051	1
52	fosfina	15	0	0.573	1	0.015	1
53	fosgen	16	0	0.688	1	0.053	1
54	C1mercaptan	12	0	0.773	1	0.1638	1
55	C1formiat	20	0	0.626	1	0.017	1
56	di-C1eter	19	0	0.624	1	0.019	1
57	di-C1sulfurã	14	0	0.742	1	0.1093	1
58	C <sub>2</sub> mercaptan	14	0	0.748	1	0.1151	1
59	C <sub>2</sub> formiat	21	0	0.644	1	0.021	1
60	C1acetat	20	0	0.652	1	0.021	1
61	C <sub>3</sub> formiat	20	0	0.658	1	0.025	1
62	C1propionat	22	0	0.665	1	0.025	1
63	C <sub>2</sub> acetat	19	0	0.669	1	0.026	1
64	di-C <sub>2</sub> S	14	0	0.778	1	0.1452	1
65	di-C <sub>2</sub> aminã	14	0	0.751	1	0.1014	1
66	C <sub>3</sub> acetat	20	0	0.682	1	0.03	1
67	C <sub>2</sub> propionat	21	0	0.682	1	0.03	1
68	C1butirat	21	0	0.678	1	0.029	1
69	C1isobutirat	20	0	0.676	1	0.029	1
70	C <sub>2</sub> C <sub>3</sub> eter	17	0	0.686	1	0.04	1
71	ciclohexan	17	0	0.639	1	0.024	1
72	F-benzen	21	0	0.649	1	0.026	1
73	Cl-benzen	15	0	0.653	1	0.027	1
74	Br-benzen	13	0	0.646	1	0.025	1
75	I-benzen	10	0	0.642	1	0.023	1

## Anexa 4

### Proprietăți PVT și de echilibru extrase din baza de date pentru componenti puri PVTDATA1

Dioxid de carbon. Curba de saturație

$T$ (K)	$P^s$ (bar)	$V^L$ ( $\text{cm}^3/\text{mol}$ )	$V^V$ ( $\text{cm}^3/\text{mol}$ )
216.58	5.18	37.347	3134.2
218	5.508	37.507	2965.7
220	5.996	37.737	2744.8
222	6.515	37.973	2541.7
224	7.068	38.215	2355.2
226	7.654	38.463	2184.1
228	8.276	38.717	2027
230	8.935	38.978	1882.8
232	9.632	39.246	1750.4
234	10.368	39.521	1628.7
236	11.146	39.805	1516.8
238	11.966	40.096	1413.7
240	12.83	40.397	1318.8
242	13.739	40.706	1231.2
244	14.695	41.026	1150.2
246	15.698	41.356	1075.4
248	16.752	41.698	1006.2
250	17.856	42.051	941.95
252	19.013	42.418	882.35
254	20.223	42.798	826.96
256	21.489	43.193	775.41
258	22.812	43.605	727.38
260	24.194	44.034	682.56
262	25.635	44.481	640.69
264	27.138	44.95	601.52
266	28.705	45.442	564.81
268	30.336	45.958	530.38
270	32.034	46.502	498.02
272	33.801	47.077	467.57
274	35.638	47.687	438.87
276	37.549	48.336	411.77
278	39.533	49.029	386.14
280	41.595	49.773	361.84
282	43.737	50.576	338.76
284	45.96	51.449	316.77
286	48.269	52.404	295.77
288	50.665	53.46	275.64
290	53.152	54.641	256.25
292	55.734	55.981	237.48



*Dioxid de carbon (continuare)*

294	58.415	57.531	219.14
296	61.198	59.376	201.05
298	64.09	61.661	182.86
300	67.095	64.69	164
302	70.22	69.297	143.03
303	71.83	73.123	130.3
304.21	73.825	94.44	94.44

## Dioxid de carbon. Izoterme

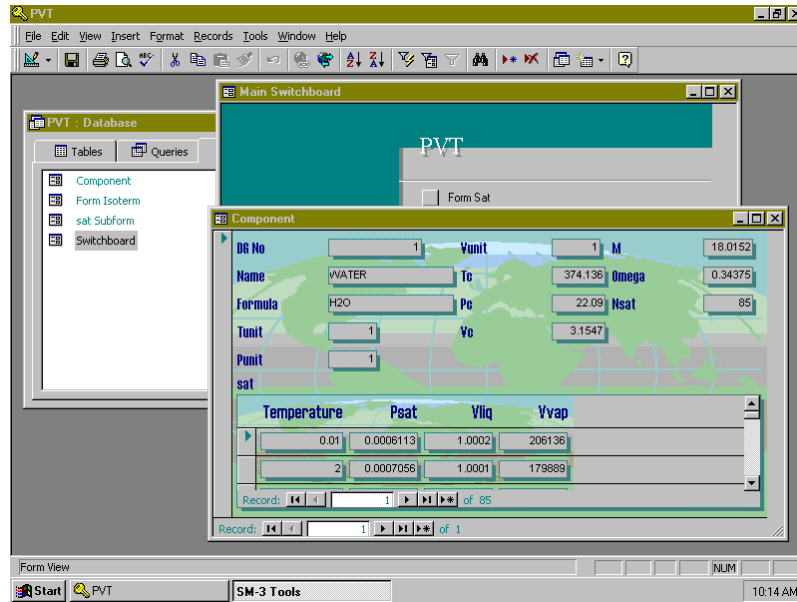
<i>P</i> (bar)	<i>V</i> (cm <sup>3</sup> /mol) <i>T</i> = 350 K	<i>V</i> (cm <sup>3</sup> /mol) <i>T</i> = 500 K	<i>V</i> (cm <sup>3</sup> /mol) <i>T</i> = 700 K	<i>V</i> (cm <sup>3</sup> /mol) <i>T</i> = 900 K
2	14464	20753	29095	37416
4	7188.9	10362	14547	18714
6	4763.8	6897.9	9697.6	12480
8	3551.1	5166	7272.9	9362.8
10	2823.4	4127	5818.2	7492.5
20	1367.3	2048.9	2908.7	3752.2
40	637.29	1010.3	1454.3	1882.3
60	392.03	664.58	969.81	1259.2
80	267.84	492.16	727.84	947.86
100	192.26	389.14	582.9	761.21
150	97.772	253.28	390.39	512.83
250	62.618	149.03	238.2	315.16
500	49.7	82.218	128.22	231.19
750	45.341	64.836	94.339	168.97
1000	42.799	57.042	78.489	145.16

## Etan. Curba de saturatie

$T$ (K)	$P^s$ (bar)	$V^L$ ( $\text{cm}^3/\text{mol}$ )	$V^V$ ( $\text{cm}^3/\text{mol}$ )
100	0.000111	46.89	7.471E7
105	0.0003027	47.29	2.88E7
110	0.0007467	47.7	1.224E7
115	0.00169	48.13	5.659E6
120	0.00355	48.56	2.815E6
125	0.00696	49	1.492E6
130	0.01291	49.45	836700.
135	0.02275	49.91	492800.
140	0.03831	50.38	303100.
145	0.06198	50.87	193800.
150	0.09672	51.36	128200.
155	0.1462	51.88	87460.
160	0.2146	52.41	61310.
165	0.307	52.95	44040.
170	0.429	53.51	32340.
175	0.5868	54.1	24220.
180	0.7874	54.7	18460.
185	1.038	55.33	14300.
190	1.347	55.98	11240.
195	1.723	56.65	8944.
200	2.174	57.36	7203.
205	2.71	58.1	5863.
210	3.34	58.88	4818.
215	4.074	59.7	3993.
220	4.922	60.56	3334.
225	5.895	61.47	2804.
230	7.004	62.44	2372.
235	8.259	63.48	2017.
240	9.67	64.59	1724.
245	11.25	65.78	1479.
250	13.01	67.08	1273.
255	14.96	68.5	1099.
260	17.12	70.05	950.7
265	19.5	71.79	823.2
270	22.1	73.74	712.9
275	24.95	75.97	616.8
280	28.06	78.57	532.2
285	31.45	81.7	456.9
290	35.14	85.61	388.7
295	39.16	90.88	325.2
300	43.54	99.08	262.3
305.33	48.714	147.06	147.06

## Etan. Izoterme

$P(\text{bar})$	$V(\text{cm}^3/\text{mol})$ $T = 220 \text{ K}$	$V(\text{cm}^3/\text{mol})$ $T = 260 \text{ K}$	$V(\text{cm}^3/\text{mol})$ $T = 350 \text{ K}$	$V(\text{cm}^3/\text{mol})$ $T = 500 \text{ K}$
0.1	182575	215939	290903	415720
0.5	36205	42955	58043	83076
1.013	17682	21063	28567	40961
1.5	11828	14146	19251	27650
2	8780	10546	14405	20723
3	5729	6945	9559	13798
4	4199	5144	7136	10336
5	60.55	4062	5683	8259
6	60.54	3340	4713	6874
8	60.5	2434	3502	5143
10	60.45	1886	2774	4105
14	60.38	1251	1942	2913
18	60.3	69.99	1479	2259
22	60.22	69.73	1184.02	1839.47
26	60.14	69.48	979.06	1549.14
30	60.07	69.24	828.27	1336.3
34	59.99	69.01	712.51	1173.61
38	59.92	68.79	620.7	1045.25
42	59.85	68.58	545.97	940.4
46	59.77	68.37	483.84	855.68
50	59.7	68.17	431.27	783.74
55	59.62	67.93	375.81	708.62
60	59.53	67.7	329.11	646.11
65	59.45	67.47	289.25	593.31
70	59.36	67.26	254.96	548.14
80	59.2	66.85	200.56	474.97
90	59.04	66.46	163.3	418.36
100	58.89	66.1	139.75	373.38
140	58.32	64.83	102.64	260.26
180	57.8	63.77	91.04	201.21
220	57.32	62.86	84.95	168.79
260	56.89	62.06	80.95	145.05
300	56.48	61.38	78.02	130.28
350	56.01	60.57	75.24	117.48
400	55.58	59.87	73.06	108.5
450	55.18	59.24	71.29	101.87
500	54.81	58.67	69.79	96.76
550	54.46	58.15	68.51	92.7
600	54.13	57.66	67.39	89.37
700	53.52	56.79	65.5	84.21



Proprietăți *PVT* ale apei. Imagine captată din baza de date PVTDATA1.

## Anexa 5

### Deviațiile PVT pentru ecuația de stare GEOS3C (studiu efectuat pe baza de date PVTDATA1)

Nr.	Component	%AAD Ps	%AAD VI	%AAD Vv	%AAD 1PV	MAX %	%AAD Ov	%RMSE Ov
1.	amoniac	0.16	3.88	2.15	4.02	14.7	3.08	4.61
2.	argon	0.15	1.69	2.55	1.52	8.89	1.49	2.39
3.	CO <sub>2</sub>	0.24	1.50	3.79	1.46	10.4	1.63	2.74
4.	helium	0.27	0.60	2.15	9.37	76.6	5.29	12.94
5.	apa	0.91	2.57	2.38	2.68	17.4	2.28	3.74
6.	hidrogen	0.10	0.95	1.86	2.98	32.8	2.61	5.62
7.	metan	0.26	2.17	2.28	2.76	24.4	2.37	3.95
8.	etan	0.43	3.27	1.43	3.09	11.0	2.70	3.58
9.	propan	0.42	3.66	1.56	3.46	12.1	2.96	4.03
10.	<i>i</i> -butan	0.19	1.40	2.80	3.21	14.6	2.61	3.90
11.	<i>n</i> -butan	0.21	1.53	2.76	3.76	12.2	2.99	4.40
12.	<i>i</i> -pentan	0.18	2.61	4.66	2.71	10.1	2.60	3.84
13.	<i>n</i> -pentan	0.16	1.87	3.39	4.63	13.9	3.61	5.11
14.	<i>n</i> -hexan	0.38	2.87	2.09	4.11	15.7	3.00	4.69
15.	CH <sub>3</sub> Cl	0.23	1.29	3.32	3.74	14.5	3.15	5.02
16.	fluor	0.51	2.98	1.77	2.45	11.9	2.22	3.19
17.	N <sub>2</sub> O	0.09	1.07	4.70	3.99	12.7	3.63	5.12
18.	SO <sub>2</sub>	0.21	1.26	2.55	4.19	13.0	3.57	5.26
19.	H <sub>2</sub> S	0.24	1.08	3.27	2.46	10.6	2.30	3.61
20.	freon-21	0.44	3.02	4.03	3.04	12.9	2.76	4.03
21.	NF <sub>3</sub>	0.57	2.14	1.58	2.23	8.31	2.05	2.82
22.	etilenă	0.56	3.35	2.17	3.58	12.0	3.03	4.28
23.	propilenă	0.32	1.27	4.71	2.89	11.2	2.74	3.88
24.	1-butena	0.25	0.99	4.92	2.83	11.0	2.64	3.61
25.	propină	0.08	1.11	3.56	3.84	12.8	3.38	4.86
26.	benzen	0.45	3.14	7.05	3.54	24.7	3.54	5.54
27.	ciclopropan	1.02	1.11	3.94	3.27	11.7	2.96	4.11
28.	neon	0.63	1.40	1.55	1.25	9.70	1.23	1.84
29.	azot	0.30	2.41	2.99	3.44	29.1	3.04	5.33
30.	oxigen	0.58	2.60	2.32	2.66	9.96	2.45	3.31
31.	CO	0.52	1.68	2.93	1.92	12.7	1.85	2.77
32.	metanol	0.39	3.37	3.57	0	13.8	2.44	3.52
33.	etanol	1.36	3.19	1.99	0	10.9	2.18	2.92
34.	propanol	1.80	2.45	2.32	0	14.0	2.19	2.98
35.	acetoneitril	0.52	5.33	6.12	7.28	25.6	6.57	8.30
36.	acetona	0.60	2.49	12.7	0	20.4	5.27	8.03
37.	acetilenă	0.87	2.39	2.85	1.3	13.9	1.56	2.57
38.	<i>n</i> -heptan	0.36	1.83	3.54	5.03	13.6	3.35	4.99
39.	<i>n</i> -octan	0.24	2.01	3.29	3.24	10.5	2.55	3.62
40.	C <sub>2</sub> H <sub>5</sub> Cl	0.34	1.89	5.26	0	13.3	2.49	4.38

## Anexa 5 (continuare)

41.	C <sub>2</sub> eter	0.41	2.03	3.37	0	11.8	1.94	3.22
42.	acid acetic	1.63	5.64	48.5	0	94.1	18.6	32.43
43.	freon11	0.33	1.62	0.81	0	4.55	0.92	1.37
44.	freon12	0.42	2.41	4.43	0	17.1	2.42	4.21
45.	freon13	0.43	3.11	1.99	0	12.1	1.85	3.05
46.	freon22	1.06	3.43	0.99	0	8.67	1.83	2.62
47.	CF <sub>4</sub>	0.29	3.63	2.12	0	14.4	2.02	3.44
48.	CCl <sub>4</sub>	0.25	2.02	3.81	0	15.0	2.03	3.54
49.	clor	0.40	1.73	4.56	0	9.38	2.23	3.31
50.	HCl	0.22	3.03	5.39	0	21.6	2.88	4.83
51.	SO <sub>3</sub>	1.01	2.34	7.98	0	12.4	3.78	5.40
52.	fosfina	0.41	1.54	6.53	0	26.4	2.83	5.97
53.	fosgen	0.65	1.37	11.1	0	16.6	4.37	7.30
54.	C1mercaptan	0.13	0.86	25.2	0	50.7	8.75	16.93
55.	C1formiat	0.58	2.37	2.54	0	9.99	1.83	2.77
56.	di-C1eter	0.69	1.94	3.49	0	9.46	2.04	2.96
57.	di-C1sulfurã	0.53	1.42	15.0	0	27.3	5.67	9.66
58.	C <sub>2</sub> mercaptan	0.39	1.46	14.2	0	20.5	5.36	8.78
59.	C <sub>2</sub> formiat	0.58	2.18	3.25	0	11.4	2.00	3.08
60.	C1acetat	0.28	2.35	3.13	0	11.5	1.92	3.01
61.	C <sub>3</sub> formiat	0.17	2.17	3.19	0	12.0	1.84	3.21
62.	C1propionat	0.28	2.31	3.37	0	11.1	1.99	3.42
63.	C <sub>2</sub> acetat	0.28	2.23	2.36	0	9.96	1.63	2.62
64.	di-C <sub>2</sub> S	1.01	1.54	22.5	0	36.6	8.36	14.1
65.	di-C <sub>2</sub> amina	0.69	1.12	11.3	0	17.4	4.37	7.00
66.	C <sub>3</sub> acetat	0.15	2.43	3.67	0	11.4	2.08	3.49
67.	C <sub>2</sub> propionat	0.23	2.36	2.88	0	10.9	1.82	3.15
68.	C1butirat	0.22	2.39	4.03	0	11.2	2.21	3.54
69.	C1isobutirat	0.15	2.30	3.13	0	10.9	1.86	3.08
70.	C <sub>2</sub> C <sub>3</sub> eter	0.24	1.78	44.8	0	134.4	15.6	36.9
71.	ciclohexan	0.48	1.47	3.19	0	9.99	1.71	2.79
72.	F-benzen	0.31	1.98	3.10	0	11.9	1.80	3.03
73.	Cl-benzen	0.25	1.60	0.90	0	3.13	0.92	1.30
74.	Br-benzen	0.28	1.38	1.03	0	3.35	0.90	1.28
75.	I-benzen	0.28	0.94	0.76	0	2.41	0.66	0.93
	media	0.44	2.16	5.52	3.37	17.9	3.17	5.24