

8. Geant4 Material Database[Previous](#)[Appendix . Appendix](#)[Next](#)

8. Geant4 Material Database

8.1. Pure Materials

Z	Name	ChFormula	density(g/cm ³)	I(eV)
1	G4_H		8.3748e-05	19.2
2	G4_He		0.000166322	41.8
3	G4_Li		0.534	40
4	G4_Be		1.848	63.7
5	G4_B		2.37	76
6	G4_C		2	81
7	G4_N		0.0011652	82
8	G4_O		0.00133151	95
9	G4_F		0.00158029	115
10	G4_Ne		0.000838505	137
11	G4_Na		0.971	149
12	G4_Mg		1.74	156
13	G4_Al		2.699	166
14	G4_Si		2.33	173
15	G4_P		2.2	173
16	G4_S		2	180
17	G4_Cl		0.00299473	174
18	G4_Ar		0.00166201	188
19	G4_K		0.862	190
20	G4_Ca		1.55	191
21	G4_Sc		2.989	216
22	G4_Ti		4.54	233
23	G4_V		6.11	245
24	G4_Cr		7.18	257
25	G4_Mn		7.44	272
26	G4_Fe		7.874	286
27	G4_Co		8.9	297
28	G4_Ni		8.902	311
29	G4_Cu		8.96	322
30	G4_Zn		7.133	330
31	G4_Ga		5.904	334
32	G4_Ge		5.323	350
33	G4_As		5.73	347
34	G4_Se		4.5	348
35	G4_Br		0.0070721	343
36	G4_Kr		0.00347832	352
37	G4_Rb		1.532	363
38	G4_Sr		2.54	366
39	G4_Y		4.469	379
40	G4_Zr		6.506	393
41	G4_Nb		8.57	417
42	G4_Mo		10.22	424
43	G4_Tc		11.5	428
44	G4_Ru		12.41	441
45	G4_Rh		12.41	449
46	G4_Pd		12.02	470
47	G4_Ag		10.5	470
48	G4_Cd		8.65	469
49	G4_In		7.31	488

50	G4_Sn	7.31	488
51	G4_Sb	6.691	487
52	G4_Te	6.24	485
53	G4_I	4.93	491
54	G4_Xe	0.00548536	482
55	G4_Cs	1.873	488
56	G4_Ba	3.5	491
57	G4_La	6.154	501
58	G4_Ce	6.657	523
59	G4_Pr	6.71	535
60	G4_Nd	6.9	546
61	G4_Pm	7.22	560
62	G4_Sm	7.46	574
63	G4_Eu	5.243	580
64	G4_Gd	7.9004	591
65	G4_Tb	8.229	614
66	G4_Dy	8.55	628
67	G4_Ho	8.795	650
68	G4_Er	9.066	658
69	G4_Tm	9.321	674
70	G4_Yb	6.73	684
71	G4_Lu	9.84	694
72	G4_Hf	13.31	705
73	G4-Ta	16.654	718
74	G4_W	19.3	727
75	G4_Re	21.02	736
76	G4_Os	22.57	746
77	G4_Ir	22.42	757
78	G4_Pt	21.45	790
79	G4_Au	19.32	790
80	G4_Hg	13.546	800
81	G4_Tl	11.72	810
82	G4_Pb	11.35	823
83	G4_Bi	9.747	823
84	G4_Po	9.32	830
85	G4_At	9.32	825
86	G4_Rn	0.00900662	794
87	G4_Fr	1	827
88	G4_Ra	5	826
89	G4_Ac	10.07	841
90	G4_Th	11.72	847
91	G4_Pa	15.37	878
92	G4_U	18.95	890
93	G4_Np	20.25	902
94	G4_Pu	19.84	921
95	G4_Am	13.67	934
96	G4_Cm	13.51	939
97	G4_Bk	14	952
98	G4_Cf	10	966

8.2. NIST Compounds

Ncomp	Name	density(g/cm^3)	I(eV)
6	G4_A-150_TISSUE	1.127	65.1
	1 0.101327		
	6 0.7755		
	7 0.035057		
	8 0.0523159		
	9 0.017422		
	20 0.018378		
3	G4_ACETONE	0.7899	64.2

		1	0.104122		
		6	0.620405		
		8	0.275473		
2	G4_ACETYLENE		0.0010967		58.2
		1	0.077418		
		6	0.922582		
3	G4_ADENINE		1.35		71.4
		1	0.037294		
		6	0.44443		
		7	0.518276		
13	G4_ADIPOSE_TISSUE_ICRP		0.92		63.2
		1	0.119477		
		6	0.63724		
		7	0.00797		
		8	0.232333		
		11	0.0005		
		12	2e-05		
		15	0.00016		
		16	0.00073		
		17	0.00119		
		19	0.00032		
		20	2e-05		
		26	2e-05		
		30	2e-05		
4	G4_AIR		0.00120479		85.7
		6	0.000124		
		7	0.755268		
		8	0.231781		
		18	0.012827		
4	G4_ALANINE		1.42		71.9
		1	0.0791899		
		6	0.404439		
		7	0.157213		
		8	0.359159		
2	G4_ALUMINUM_OXIDE_AL_20_3		3.97		145.2
		8	0.470749		
		13	0.529251		
3	G4_AMBER		1.1		63.2
		1	0.10593		
		6	0.788974		
		8	0.105096		
2	G4_AMMONIA		0.000826019		53.7
		1	0.177547		
		7	0.822453		
3	G4_ANILINE		1.0235		66.2
		1	0.075759		
		6	0.773838		
		7	0.150403		
2	G4_ANTHRACENE		1.283		69.5
		1	0.05655		
		6	0.94345		
6	G4_B-100_BONE		1.45		85.9
		1	0.0654709		
		6	0.536944		
		7	0.0215		
		8	0.032085		
		9	0.167411		
		20	0.176589		
3	G4_BAKELITE		1.25		72.4
		1	0.057441		
		6	0.774591		
		8	0.167968		
2	G4_BARIUM_FLUORIDE		4.89		375.9
		9	0.21672		

3	G4_BARIUM_SULFATE	56	0.78328	4.5	285.7
		8	0.274212		
		16	0.137368		
2	G4_BENZENE	56	0.58842	0.87865	63.4
		1	0.077418		
		6	0.922582		
2	G4_BERYLLIUM_OXIDE	4	0.36032	3.01	93.2
		8	0.63968		
		8	0.63968		
3	G4_BGO	8	0.154126	7.13	534.1
		32	0.17482		
		83	0.671054		
14	G4_BLOOD_ICRP	1	0.101866	1.06	75.2
		6	0.10002		
		7	0.02964		
		8	0.759414		
		11	0.00185		
		12	4e-05		
		14	3e-05		
		15	0.00035		
		16	0.00185		
		17	0.00278		
		19	0.00163		
		20	6e-05		
		26	0.00046		
		30	1e-05		
8	G4_BONE_COMPACT_ICRU	1	0.063984	1.85	91.9
		6	0.278		
		7	0.027		
		8	0.410016		
		12	0.002		
		15	0.07		
		16	0.002		
		20	0.147		
9	G4_BONE_CORTICAL_ICRP	1	0.047234	1.85	106.4
		6	0.14433		
		7	0.04199		
		8	0.446096		
		12	0.0022		
		15	0.10497		
		16	0.00315		
		20	0.20993		
2	G4_BORON_CARBIDE	30	0.0001	2.52	84.7
		5	0.78261		
		6	0.21739		
2	G4_BORON_OXIDE	5	0.310551	1.812	99.6
		8	0.689449		
		8	0.689449		
13	G4_BRAIN_ICRP	1	0.110667	1.03	73.3
		6	0.12542		
		7	0.01328		
		8	0.737723		
		11	0.00184		
		12	0.00015		
		15	0.00354		
		16	0.00177		

		17	0.00236		
		19	0.0031		
		20	9e-05		
		26	5e-05		
		30	1e-05		
2	G4_BUTANE		0.00249343	48.3	
		1	0.173408		
		6	0.826592		
3	G4_N-BUTYL_ALCOHOL		0.8098	59.9	
		1	0.135978		
		6	0.648171		
		8	0.215851		
5	G4_C-552		1.76	86.8	
		1	0.02468		
		6	0.501611		
		8	0.004527		
		9	0.465209		
		14	0.003973		
2	G4_CADMIUM_TELLURIDE		6.2	539.3	
		48	0.468355		
		52	0.531645		
3	G4_CADMIUM_TUNGSTATE		7.9	468.3	
		8	0.177644		
		48	0.312027		
		74	0.510329		
3	G4_CALCIIUM_CARBONATE		2.8	136.4	
		6	0.120003		
		8	0.479554		
		20	0.400443		
2	G4_CALCIIUM_FLUORIDE		3.18	166	
		9	0.486659		
		20	0.513341		
2	G4_CALCIIUM_OXIDE		3.3	176.1	
		8	0.285299		
		20	0.714701		
3	G4_CALCIIUM_SULFATE		2.96	152.3	
		8	0.470095		
		16	0.235497		
		20	0.294408		
3	G4_CALCIIUM_TUNGSTATE		6.062	395	
		8	0.22227		
		20	0.139202		
		74	0.638528		
2	G4_CARBON_DIOXIDE CO_2		0.00184212	85	
		6	0.272916		
		8	0.727084		
2	G4_CARBON_TETRACHLORIDE		1.594	166.3	
		6	0.078083		
		17	0.921917		
3	G4_CELLULOSE_CELLOPHANE		1.42	77.6	
		1	0.062162		
		6	0.444462		
		8	0.493376		
3	G4_CELLULOSE_BUTYRATE		1.2	74.6	
		1	0.067125		
		6	0.545403		
		8	0.387472		
4	G4_CELLULOSE_NITRATE		1.49	87	
		1	0.029216		
		6	0.271296		
		7	0.121276		
		8	0.578212		
5	G4_CERIC_SULFATE		1.03	76.7	
		1	0.107596		

	7	0.0008		
	8	0.874976		
	16	0.014627		
	58	0.002001		
2	G4_CESIUM_FLUORIDE	4.115		440.7
	9	0.125069		
	55	0.874931		
2	G4_CESIUM_IODIDE	4.51		553.1
	53	0.488451		
	55	0.511549		
3	G4_CHLOROBENZENE	1.1058		89.1
	1	0.044772		
	6	0.640254		
	17	0.314974		
3	G4_CHLOROFORM	1.4832		156
	1	0.008443		
	6	0.100613		
	17	0.890944		
10	G4_CONCRETE	2.3		135.2
	1	0.01		
	6	0.001		
	8	0.529107		
	11	0.016		
	12	0.002		
	13	0.033872		
	14	0.337021		
	19	0.013		
	20	0.044		
	26	0.014		
2	G4_CYCLOHEXANE	0.779		56.4
	1	0.143711		
	6	0.856289		
3	G4_1,2-DICHLOROBENZENE	1.3048		106.5
	1	0.027425		
	6	0.490233		
	17	0.482342		
4	G4_DICHLORODIETHYL_ETHER	1.2199		103.3
	1	0.0563811		
	6	0.335942		
	8	0.111874		
	17	0.495802		
3	G4_1,2-DICHLOROETHANE	1.2351		111.9
	1	0.04074		
	6	0.242746		
	17	0.716514		
3	G4_DIETHYL_ETHER	0.71378		60
	1	0.135978		
	6	0.648171		
	8	0.215851		
4	G4_N,N-DIMETHYL_FORMAMIDE	0.9487		66.6
	1	0.096523		
	6	0.492965		
	7	0.191625		
	8	0.218887		
4	G4_DIMETHYL_SULFOXIDE	1.1014		98.6
	1	0.077403		
	6	0.307467		
	8	0.204782		
	16	0.410348		
2	G4_ETHANE	0.00125324		45.4
	1	0.201115		
	6	0.798885		
3	G4_ETHYL_ALCOHOL	0.7893		62.9
	1	0.131269		

	6	0.521437		
	8	0.347294		
3	G4_ETHYL_CELLULOSE	1.13		69.3
	1	0.090027		
	6	0.585182		
	8	0.324791		
2	G4_ETHYLENE	0.00117497		50.7
	1	0.143711		
	6	0.856289		
4	G4_EYE_LENS_ICRP	1.1		73.3
	1	0.099269		
	6	0.19371		
	7	0.05327		
	8	0.653751		
2	G4_FERRIC_OXIDE	5.2		227.3
	8	0.300567		
	26	0.699433		
2	G4_FERROBORIDE	7.15		261
	5	0.162174		
	26	0.837826		
2	G4_FERROUS_OXIDE	5.7		248.6
	8	0.222689		
	26	0.777311		
7	G4_FERROUS_SULFATE	1.024		76.4
	1	0.108259		
	7	2.7e-05		
	8	0.878636		
	11	2.2e-05		
	16	0.012968		
	17	3.4e-05		
	26	5.4e-05		
3	G4_FREON-12	1.12		143
	6	0.099335		
	9	0.314247		
	17	0.586418		
3	G4_FREON-12B2	1.8		284.9
	6	0.057245		
	9	0.181096		
	35	0.761659		
3	G4_FREON-13	0.95		126.6
	6	0.114983		
	9	0.545621		
	17	0.339396		
3	G4_FREON-13B1	1.5		210.5
	6	0.080659		
	9	0.382749		
	35	0.536592		
3	G4_FREON-13I1	1.8		293.5
	6	0.061309		
	9	0.290924		
	53	0.647767		
3	G4_GADOLINIUM_OXYSULFIDE	7.44		493.3
	8	0.084528		
	16	0.08469		
	64	0.830782		
2	G4_GALLIUM_ARSENIDE	5.31		384.9
	31	0.482019		
	33	0.517981		
5	G4_GEL_PHOTO_EMULSION	1.2914		74.8
	1	0.08118		
	6	0.41606		
	7	0.11124		
	8	0.38064		
	16	0.01088		

6	G4_Pyrex_Glass	2.23	134
	5 0.0400639		
	8 0.539561		
	11 0.0281909		
	13 0.011644		
	14 0.377219		
	19 0.00332099		
5	G4_GLASS_LEAD	6.22	526.4
	8 0.156453		
	14 0.080866		
	22 0.008092		
	33 0.002651		
	82 0.751938		
4	G4_GLASS_PLATE	2.4	145.4
	8 0.4598		
	11 0.0964411		
	14 0.336553		
	20 0.107205		
3	G4_GLUCOSE	1.54	77.2
	1 0.071204		
	6 0.363652		
	8 0.565144		
4	G4_GLUTAMINE	1.46	73.3
	1 0.0689651		
	6 0.410926		
	7 0.191681		
	8 0.328427		
3	G4_GLYCEROL	1.2613	72.6
	1 0.0875539		
	6 0.391262		
	8 0.521184		
4	G4_GUANINE	1.58	75
	1 0.033346		
	6 0.39738		
	7 0.463407		
	8 0.105867		
4	G4_GYPSUM	2.32	129.7
	1 0.023416		
	8 0.557572		
	16 0.186215		
	20 0.232797		
2	G4_N-HEPTANE	0.68376	54.4
	1 0.160937		
	6 0.839063		
2	G4_N-HEXANE	0.6603	54
	1 0.163741		
	6 0.836259		
4	G4_KAPTON	1.42	79.6
	1 0.026362		
	6 0.691133		
	7 0.07327		
	8 0.209235		
3	G4_LANTHANUM_OXYBROMIDE	6.28	439.7
	8 0.068138		
	35 0.340294		
	57 0.591568		
3	G4_LANTHANUM_OXYSULFIDE	5.86	421.2
	8 0.0936		
	16 0.093778		
	57 0.812622		
2	G4_LEAD_OXIDE	9.53	766.7
	8 0.071682		
	82 0.928318		
3	G4_LITHIUM_AMIDE	1.178	55.5

		1	0.087783		
		3	0.302262		
		7	0.609955		
3	G4_LITHIUM_CARBONATE		2.11		87.9
		3	0.187871		
		6	0.16255		
		8	0.649579		
2	G4_LITHIUM_FLUORIDE		2.635		94
		3	0.267585		
		9	0.732415		
2	G4_LITHIUM_HYDRIDE		0.82		36.5
		1	0.126797		
		3	0.873203		
2	G4_LITHIUM_IODIDE		3.494		485.1
		3	0.051858		
		53	0.948142		
2	G4_LITHIUM_OXIDE		2.013		73.6
		3	0.46457		
		8	0.53543		
3	G4_LITHIUM_TETRABORATE		2.44		94.6
		3	0.082085		
		5	0.25568		
		8	0.662235		
13	G4_LUNG_ICRP		1.05		75.3
		1	0.101278		
		6	0.10231		
		7	0.02865		
		8	0.757072		
		11	0.00184		
		12	0.00073		
		15	0.0008		
		16	0.00225		
		17	0.00266		
		19	0.00194		
		20	9e-05		
		26	0.00037		
		30	1e-05		
5	G4_M3_WAX		1.05		67.9
		1	0.114318		
		6	0.655824		
		8	0.0921831		
		12	0.134792		
		20	0.002883		
3	G4_MAGNESIUM_CARBONATE		2.958		118
		6	0.142455		
		8	0.569278		
		12	0.288267		
2	G4_MAGNESIUM_FLUORIDE		3		134.3
		9	0.609883		
		12	0.390117		
2	G4_MAGNESIUM_OXIDE		3.58		143.8
		8	0.396964		
		12	0.603036		
3	G4_MAGNESIUM_TETRABORATE		2.53		108.3
		5	0.240837		
		8	0.62379		
		12	0.135373		
2	G4_MERCURIC_IODIDE		6.36		684.5
		53	0.55856		
		80	0.44144		
2	G4_METHANE		0.000667151		41.7
		1	0.251306		
		6	0.748694		
3	G4_METHANOL		0.7914		67.6

		1	0.125822		
		6	0.374852		
		8	0.499326		
5	G4_MIX_D_WAX			0.99	60.9
		1	0.13404		
		6	0.77796		
		8	0.03502		
		12	0.038594		
		22	0.014386		
6	G4_MS20_TISSUE			1	75.1
		1	0.081192		
		6	0.583442		
		7	0.017798		
		8	0.186381		
		12	0.130287		
		17	0.0009		
13	G4_MUSCLE_SKELETAL_ICRP			1.04	75.3
		1	0.100637		
		6	0.10783		
		7	0.02768		
		8	0.754773		
		11	0.00075		
		12	0.00019		
		15	0.0018		
		16	0.00241		
		17	0.00079		
		19	0.00302		
		20	3e-05		
		26	4e-05		
		30	5e-05		
9	G4_MUSCLE_STRIATED_ICRU			1.04	74.7
		1	0.101997		
		6	0.123		
		7	0.035		
		8	0.729003		
		11	0.0008		
		12	0.0002		
		15	0.002		
		16	0.005		
		19	0.003		
4	G4_MUSCLE_WITH_SUCROSE			1.11	74.3
		1	0.0982341		
		6	0.156214		
		7	0.035451		
		8	0.710101		
4	G4_MUSCLE_WITHOUT_SUCROSE			1.07	74.2
		1	0.101969		
		6	0.120058		
		7	0.035451		
		8	0.742522		
2	G4_NAPHTHALENE			1.145	68.4
		1	0.062909		
		6	0.937091		
4	G4_NITROBENZENE			1.19867	75.8
		1	0.040935		
		6	0.585374		
		7	0.113773		
		8	0.259918		
2	G4_NITROUS_OXIDE			0.00183094	84.9
		7	0.636483		
		8	0.363517		
4	G4_NYLON-8062			1.08	64.3
		1	0.103509		
		6	0.648416		

	7	0.0995361		
	8	0.148539		
4	G4_NYLON-6/6	1.14	63.9	
	1	0.097976		
	6	0.636856		
	7	0.123779		
	8	0.141389		
4	G4_NYLON-6/10	1.14	63.2	
	1	0.107062		
	6	0.680449		
	7	0.099189		
	8	0.1133		
4	G4_NYLON-11_RILSAN	1.425	61.6	
	1	0.115476		
	6	0.720818		
	7	0.0764169		
	8	0.0872889		
2	G4_OCTANE	0.7026	54.7	
	1	0.158821		
	6	0.841179		
2	G4_PARAFFIN	0.93	55.9	
	1	0.148605		
	6	0.851395		
2	G4_N-PENTANE	0.6262	53.6	
	1	0.167635		
	6	0.832365		
8	G4_PHOTO_EMULSION	3.815	331	
	1	0.0141		
	6	0.072261		
	7	0.01932		
	8	0.066101		
	16	0.00189		
	35	0.349103		
	47	0.474105		
	53	0.00312		
2	G4_PLASTIC_SC_VINYLTOLUENE	1.032	64.7	
	1	0.085		
	6	0.915		
2	G4_PLUTONIUM_DIOXIDE	11.46	746.5	
	8	0.118055		
	94	0.881945		
3	G4_POLYACRYLONITRILE	1.17	69.6	
	1	0.0569829		
	6	0.679055		
	7	0.263962		
3	G4_POLYCARBONATE	1.2	73.1	
	1	0.055491		
	6	0.755751		
	8	0.188758		
3	G4_POLYCHLOROSTYRENE	1.3	81.7	
	1	0.061869		
	6	0.696325		
	17	0.241806		
2	G4_POLYETHYLENE (C_2H_4)_N-Polyethylene	0.94	57.4	
	1	0.143711		
	6	0.856289		
3	G4_MYLAR	1.4	78.7	
	1	0.041959		
	6	0.625016		
	8	0.333025		
3	G4_PLEXIGLASS	1.19	74	
	1	0.080538		
	6	0.599848		

3	8	0.319614		
	G4_POLYOXYMETHYLENE	1.425		77.4
	1	0.067135		
	6	0.400017		
	8	0.532848		
2	G4_POLYPROPYLENE (C_2H_4)_N-Polypropylene	0.9		56.5
	1	0.143711		
	6	0.856289		
2	G4_POLYSTYRENE	1.06		68.7
	1	0.077418		
	6	0.922582		
2	G4_TEFロン	2.2		99.1
	6	0.240183		
	9	0.759817		
3	G4_POLYTRIFLUOROCHLOROETHYLENE	2.1		120.7
	6	0.20625		
	9	0.489354		
	17	0.304395		
3	G4_POLYVINYL_ACETATE	1.19		73.7
	1	0.070245		
	6	0.558066		
	8	0.371689		
3	G4_POLYVINYL_ALCOHOL	1.3		69.7
	1	0.091517		
	6	0.545298		
	8	0.363185		
3	G4_POLYVINYL_BUTYRAL	1.12		67.2
	1	0.092802		
	6	0.680561		
	8	0.226637		
3	G4_POLYVINYL_CHLORIDE	1.3		108.2
	1	0.04838		
	6	0.38436		
	17	0.56726		
3	G4_POLYVINYLIDENE_CHLORIDE	1.7		134.3
	1	0.020793		
	6	0.247793		
	17	0.731414		
3	G4_POLYVINYLIDENE_FLUORIDE	1.76		88.8
	1	0.03148		
	6	0.375141		
	9	0.593379		
4	G4_POLYVINYL_PYRROLIDONE	1.25		67.7
	1	0.081616		
	6	0.648407		
	7	0.126024		
	8	0.143953		
2	G4_POTASSIUM_IODIDE	3.13		431.9
	19	0.235528		
	53	0.764472		
2	G4_POTASSIUM_OXIDE	2.32		189.9
	8	0.169852		
	19	0.830148		
2	G4_PROPAANE	0.00187939		47.1
	1	0.182855		
	6	0.817145		
2	G4_LPROPANE	0.43		52
	1	0.182855		
	6	0.817145		
3	G4_N-PROPYL_ALCOHOL	0.8035		61.1
	1	0.134173		
	6	0.599595		

	8	0.266232		
3	G4_PYRIDINE	0.9819	66.2	
	1	0.06371		
	6	0.759217		
	7	0.177073		
2	G4_RUBBER_BUTYL	0.92	56.5	
	1	0.143711		
	6	0.856289		
2	G4_RUBBER_NATURAL	0.92	59.8	
	1	0.118371		
	6	0.881629		
3	G4_RUBBER_NEOPRENE	1.23	93	
	1	0.05692		
	6	0.542646		
	17	0.400434		
2	G4_SILICON_DIOXIDE SiO ₂	2.32	139.2	
	8	0.532565		
	14	0.467435		
2	G4_SILVER_BROMIDE	6.473	486.6	
	35	0.425537		
	47	0.574463		
2	G4_SILVER_CHLORIDE	5.56	398.4	
	17	0.247368		
	47	0.752632		
3	G4_SILVER_HALIDES	6.47	487.1	
	35	0.422895		
	47	0.573748		
	53	0.003357		
2	G4_SILVER_IODIDE	6.01	543.5	
	47	0.459458		
	53	0.540542		
13	G4_SKIN_ICRP	1.1	72.7	
	1	0.100588		
	6	0.22825		
	7	0.04642		
	8	0.619002		
	11	7e-05		
	12	6e-05		
	15	0.00033		
	16	0.00159		
	17	0.00267		
	19	0.00085		
	20	0.00015		
	26	1e-05		
	30	1e-05		
3	G4_SODIUM_CARBONATE	2.532	125	
	6	0.113323		
	8	0.452861		
	11	0.433815		
2	G4_SODIUM_IODIDE	3.667	452	
	11	0.153373		
	53	0.846627		
2	G4_SODIUM_MONOXIDE	2.27	148.8	
	8	0.258143		
	11	0.741857		
3	G4_SODIUM_NITRATE	2.261	114.6	
	7	0.164795		
	8	0.56472		
	11	0.270485		
2	G4_STILBENE	0.9707	67.7	
	1	0.067101		
	6	0.932899		
3	G4_SUCROSE	1.5805	77.5	
	1	0.064779		

		6	0.42107		
		8	0.514151		
2	G4_TERPHENYL		1.234		71.7
		1	0.044543		
		6	0.955457		
13	G4_TESTES_ICRP		1.04		75
		1	0.104166		
		6	0.09227		
		7	0.01994		
		8	0.773884		
		11	0.00226		
		12	0.00011		
		15	0.00125		
		16	0.00146		
		17	0.00244		
		19	0.00208		
		20	0.0001		
		26	2e-05		
		30	2e-05		
2	G4_TETRACHLOROETHYLENE		1.625		159.2
		6	0.144856		
		17	0.855144		
2	G4_THALLIUM_CHLORIDE		7.004		690.3
		17	0.147822		
		81	0.852178		
13	G4_TISSUE_SOFT_ICRP		1		72.3
		1	0.104472		
		6	0.23219		
		7	0.02488		
		8	0.630238		
		11	0.00113		
		12	0.00013		
		15	0.00133		
		16	0.00199		
		17	0.00134		
		19	0.00199		
		20	0.00023		
		26	5e-05		
		30	3e-05		
4	G4_TISSUE_SOFT_ICRU-4		1		74.9
		1	0.101172		
		6	0.111		
		7	0.026		
		8	0.761828		
4	G4_TISSUE-METHANE		0.00106409		61.2
		1	0.101869		
		6	0.456179		
		7	0.035172		
		8	0.40678		
4	G4_TISSUE-PROPANE		0.00182628		59.5
		1	0.102672		
		6	0.56894		
		7	0.035022		
		8	0.293366		
2	G4_TITANIUM_DIOXIDE		4.26		179.5
		8	0.400592		
		22	0.599408		
2	G4_TOLUENE		0.8669		62.5
		1	0.08751		
		6	0.91249		
3	G4_TRICHLOROETHYLENE		1.46		148.1
		1	0.007671		
		6	0.182831		
		17	0.809498		

4	G4_TRIETHYL_PHOSPHATE	1.07	81.2
	1 0.082998		
	6 0.395628		
	8 0.351334		
	15 0.17004		
2	G4_TUNGSTEN_HEXAFLUORIDE	2.4	354.4
	9 0.382723		
	74 0.617277		
2	G4_URANIUM_DICARBIDE	11.28	752
	6 0.091669		
	92 0.908331		
2	G4_URANIUM_MONOCARBIDE	13.63	862
	6 0.048036		
	92 0.951964		
2	G4_URANIUM_OXIDE	10.96	720.6
	8 0.118502		
	92 0.881498		
4	G4_UREA	1.323	72.8
	1 0.067131		
	6 0.199999		
	7 0.466459		
	8 0.266411		
4	G4_VALINE	1.23	67.7
	1 0.0946409		
	6 0.512644		
	7 0.119565		
	8 0.27315		
3	G4_VITON	1.8	98.6
	1 0.009417		
	6 0.280555		
	9 0.710028		
2	G4_WATER H_20	1	75
	1 0.111894		
	8 0.888106		
2	G4_WATER_VAPOR H_20-Gas	0.000756182	71.6
	1 0.111894		
	8 0.888106		
2	G4_XYLENE	0.87	61.8
	1 0.094935		
	6 0.905065		
1	G4_GRAPHITE Graphite	1.7	78

8.3. HEP Materials

Ncomp	Name	density(g/cm^3)	I(eV)
1	G4_lH2	0.0708	21.8
1	G4_lAr	1.396	188
1	G4_lKr	2.418	352
1	G4_lXe	2.953	482
3	G4_PbW04	8.28	0
	8 0.140637		
	82 0.455366		
	74 0.403998		
1	G4_Galactic	1e-25	21.8

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