PHYSICAL PROPERTIES OF MATERIALS

6T: Metals and non-Metallic Solids

SUBSTANCE	Specific Heat	Heat of Fusion Btu/lb.	Melting Point °F	Density—Weight in lbs./cu. ft.
Aluminum 2024-T3	.24	167	935	173
Aluminum 1100-0	.24	169	1190	169
Antimony	.23	25	1166	423
Asbestos Cement Board	.25 ±	..	...	121
Asphalt	.40	40	250	131
Bakelite Resin, Pure	.3-.4	..	...	74-81
Barium	.068	..	1562	225
Beeswax	...	75	144	60.5
Beryllium	.052	..	2345	113.5
Bismuth	.031	23	520	612
Boron	.309	..	4172	144
Brass, 70%	.096	..	1750	532
Brickwork & Masonry	.220	..	...	131
Bronze (75%Cu; 25%Sn)	.082	75	1832	541
Cadmium	.055	23.8	610	540
Calcium	.149	140	1564	96.7
Calcium Chloride	.17	..	1422	157
Carbon	.280	..	6700	138
Cement, Portland, Loose	.19	..	...	94
Cerafelt Insulation @ 1000°F	.25	..	...	3
Ceramic Fiber	.27	..	...	4-10
Chalk	.215	..	...	112-175
Chromium	.11	..	2822	450
Clay	.224	..	3160	90
Coal	.32	..	...	80
Coal Tar	.35-.45	..	...	78
Cobalt	.099	115.2	2696	554
Coke	.265	..	...	62-88
Concrete, Cinder	.16	..	...	100
Concrete, Stone	.156	..	...	144
Copper	.095	91.1	1981	556
Cork	.36	..	...	13.5
Cotton (Flax, Hemp)	.31	..	...	92.4
Delrin	.350	..	...	88.1
Firebrick, Fireclay	.243	..	2900	137-150
Firebrick, Silica	.258	..	3000	144-162
Glass	.20	..	2200 ±	164
Gold	.032	29.0	1945	1206
Granite	.192	..	...	160-175
Graphite	.20	..	...	130
Ice	.53	144	32	56.0
Incoloy 800	.13	..	2475-2525	501
Inconel 600	.126	..	2500	525
Invar (36%Ni)	.126	..	2600	506
Iron, Cast	.12	..	2150	449
Iron, Wrought	.12	..	2800	480
Isoprene, Rubber	.48	..	...	58
Lead, Solid	.032	11.3	620	708
Limestone	.217	..	...	130-175
Lithium	.79	59	367	367
Manganese	.115	116	2268	463
Magnesium	.27	160	1202	109
Magnesia, 85% Mg O (Compacted)	.222	..	5070	19
	.209	..	...	194
Mercury	.033	5	– 38	844
Mica	.21	..	...	176
Molybdenum	.061	126	4750	638

SUBSTANCE	Specific Heat	Heat of Fusion Btu/lb.	Melting Point °F	Density—Weight in lbs./cu. ft.
Monel 400	.11	..	2370	551
Nickel 200	.12	133	2615	555
Nichrome (80% Ni.-20% Cr.)	.11	..	2550	522
Paper	.45	..	...	58.8
Paraffin	.69	63	133	55.3
Pitch (Hard)	...	..	300 ±	83
Plastics:				
ABS	.35	..	...	69-76
Acrylic	.34	..	...	69-74
Cellulose Acetate	.3-.5	..	...	76-83
Cellulose Acetate Butyrate	.3-.4	..	...	74
Epoxy	.25-.3	..	...	66-88
Fluoroplastics	.28	..	...	131-150
Nylon	.3-.5	..	...	67-72
Phenolic	.35	..	...	85-124
Polycarbonate	.3	..	...	74-78
Polyester	.2-.35	..	...	66-92
Polyethylene	.54	..	...	57-60
Polyimides	.27-.31	..	...	90
Polypropylene	.46	..	...	55-57
Polystyrene	.32	..	...	66
Polyvinyl Chloride Acetate	.2-.3	..	...	72-99
Platinum	.035	49	3225	1339
Porcelain	.26	..	...	145-155
Potassium	.058	26.2	146	750
Potassium Chloride	.17	..	1454	124
Potassium Nitrate	.26	..	633	132
Quartz	.26	..	...	138
Rhodium	.059	..	3570	776
Rubber	.44	..	...	76.0
Rubber, Synthetic	.40	..	...	58
Silicone Rubber	.45	..	...	78
Silicon	.162	..	2570	14.5
Silver	.057	38	1760	665
Sodium	.295	49.5	207	60
Solder (50% Pb-50% Sn.)	.051	17	361	558
Steatite	.20	..	...	162
Steel Mild	.122	..	2760	491
Steel S. 304	.12	..	2550	494
Steel S. 430	.11	..	2650	475
Sulfur	.175	17	246	130
Sugar	.30	..	320	105
Tallow	...	..	90 +	60.0
Tantalum	.035	..	5425	104
Teflon	.25	..	...	135
Tin, Solid	.065	261	450	454
Titanium 99.0%	.13	..	3035	283
Tungsten	.032	79	6170	1200
Type Metal (85% Pb.-13% Sb.)	.040	14 +	500	669
Uranium	.028	..	3075	1170
Vinyl	.3-.5	..	...	79.5
Wood (Pine)	.45 ±	..	...	34
Wood (Oak)	.57	..	...	50
Zirconium	.066	108	3350	400
Zinc	.096	43.3	787	445

± Estimated

7T: Metals in Liquid State

SUBSTANCE	Specific Heat	Heat of Fusion Btu/lb.	Melting Point °F	Temperature °F	Density—Weight in lbs./cu. ft.
Aluminum	.26	173	1220.4	1220	148.6
	.26	...	...	1292	147.7
	.26	...	...	1454	...
Bismuth	.034 @ 520° F	21.6	520	572	626.2
	.0354	...	...	752	618.7
	.0376	...	...	1112	603.1
Cadmium	.0632	23.8	609	626	500
	.0632	...	...	662	498.8
	.0632	...	...	680	...
	.0632	...	...	752	495
Gold	.0355	26.9	1945	2012	1076
Lead	.038	10.6	621	700	655.5
	.037	...	...	932	648.7
Lithium	1.0	284.4	354	392	31.7
	1.0	...	...	752	31
Magnesium	.317	148	1204	1204	98.
	...	...	...	1328	94.3
	.321	...	...	1341	...

SUBSTANCE	Specific Heat	Heat of Fusion Btu/lb.	Melting Point °F	Temperature °F	Density—Weight in lbs./cu. ft.
Mercury	.03334	5	–38	32	...
	.03279	...	...	212	833.6
	...	...	...	320	...
	.03245	...	...	392	818.8
Potassium	.1901	26.3	147	300	50.6
	.1826	...	...	752	46.6
Silver	.0692	44.8	1761	1761	580.6
	.0692	...	...	1832	578.1
	.0692	...	...	2000	574.4
Sodium	.331	48.7	208	212	57.9
	.320	...	...	400	56.2
	.301	...	...	752	53.3
Solder .5 Sn, .5 Pb	.0556	17	421	...	...
.6 Sn, .4 Pb	.0584	28	375	...	...
Tin	.058	26.1	449	482	...
	...	...	...	768	426.6
	...	...	...	783	...
Zinc	.12	43.9	787	787	432
	...	...	...	932	...
	.117	...	...	1112	425

8T: Liquids

SUBSTANCE	Specific Heat	Heat of Vaporization Btu/lb.	Boiling Point °F	Density—Weight in lbs./cu.ft.	Weight in lbs./gal.
Acetic Acid, 100%	.48	175	245	65.4	8.74
Acetone, 100%	.514	225	133	49	6.5
Allyl Alcohol	.665	293	207	55	7.35
Ammonia, 100%	1.1	589	-27	47.9	6.4
Amyl Alcohol	.65	216	280	55	7.35
Aniline	.514	198	63	64.6	8.63
Arochier Oil	.28		650	89.7	12.00
Brine Sodium Chloride, 25%	.786	730	220	74.1	9.9
Butly Alcohol	.687	254	244	45.3	6.0
Butyric Acid	.515		345	50.4	6.73
Carbon Tetrachloride	.21		170	98.5	13.16
Corn Syrup, Dextrose	.65 ±		231	87.8	11.73
Cottonseed Oil	.47			59.2	7.9
Ether	.503	160	95	46	6.14
Ethyl Acetate	.475	183.5	180	51.5	6.88
Ethyl Alcohol, 95%	.60	370		50.4	6.74
Ethyl Bromide	.215	108	101	90.5	12.1
Ethyl Chloride	.367	166.5	54	57	7.62
Ethyl Iodide	.161	81.3	160	113	15.1
Ethylene Bromide	.172	83	270	120	16.0
Ethylene Chloride	.299	139	240	71.7	9.58
Ethylene Glycol	.555		387	70.0	9.36
Fatty Acid-Aleic	.7 ±		547	55.4	7.4
Fatty Acid-Palmitic	.653		520	53.1	7.1
Fatty Acid-Stearic	.550		721	52.8	7.06
Formic Acid	.525	216	213	69.2	9.25
Freon 11	.208		74.9	92.1	12.3
Freon 12	.232	62	-21.6	81.8	10.93
Freon 22	.300		-41.36	74.53	9.96
Fruit, Fresh, Avg.	.88			50-60	6.7-8.0
Glycerine	.58		556	78.7	10.5
Heptane	.49	137.1	210	38.2	5.1
Hexane	.6	142.5	155	38.2	5.1
Honey	.34				
Hydrochloric Acid, 10%	.93		221	66.5	8.89
Lard	.64			57.4	7.67
Linseed Oil	.44		552	57.9	7.74
Maple Syrup	.48				
Mercury	.033	117	675	845	113.0
Methyl Acetate	.47	176.5	133	54.8	7.3
Methyl Chloroform	.26	95	165	82.7	11.0
Methylene Chloride	.288	142	104	82.6	11.0
Milk, 3.5%	.90			64.2	8.58
Molasses	.60		220 ±	87.4	11.68
Nitric Acid, 7%	.92	918	220	64.7	8.65
Nitric Acid, 95%	.5	207	187	93.5	12.5
Nitrobenzene	.35	142.2	412		
Olive Oil	.47		570	58	7.75
Perchlorethylene	.21	90	250	101.3	13.54
Petroleum Products:					
Asphalt	.42			62.3	8.33
Benzene	.42	170	175	56	7.48
Fuel Oils:					
Fuel Oil #1 (Kerosene)	.47	86	**440 ±	50.5	6.75
Fuel Oil #2	.44			53.9	7.2
Fuel Oil Medium #3, #4	.425	67	**580 ±	55.7	7.44
Fuel Oil Heavy #5, #6	.41			58.9	7.87
Gasoline	.53	116	**280 ±	41-43	5.5-5.75
Machine/Lube Oils:					
SAE 10-30	.43			55.4	7.4
SAE 40-50	.43			55.4	7.4
Napthalene	.396	103	424 +	54.1	7.23
Paraffin, Melted (150°F +)	.69	70	572	56	7.5
Propane (Compressed)	.576		-48.1	.13	.02
Toluene	.42			53.7	7.18
Transformer Oils	.42			56.3	7.5
Phenol (Carbolic Acid)	.56		346	66.6	8.9
Phosphoric Acid, 10%	.93			65.4	8.74
Phosphoric Acid, 20%	.85			69.1	9.24
Polyurethane Foam Components:					
Part A Isocyanate	.6			77	10.3
Part B Polyoil Resin	.7			74.8	10.0
Potassium (1000°F)	.18	893	1400	44.6	5.96
Propionic Acid	.56	177.8	286	61.8	8.26
Propyl Alcohol	.57	295.2	208	50.2	6.7
Sea Water	.94			64.2	8.58
Sodium (1000°F)	.30	1810	1638	51.2	6.84
Sodium Hydroxide (Caustic Soda)					
30% Sol.	.84			82.9	11.08
50% Sol.	.78			95.4	12.75
Soybean Oil	.24-.33			57.4	7.67
Starch				95.4	12.75
Sucrose, 40% Sugar Syrup	.66		214	73.5	9.8
Sucrose, 60% Sugar Syrup	.74		218	80.4	10.75
Sulfur, Melted (500°F)	.24	120	832	112	14.97
Sulfuric Acid, 20%	.84		218	71	9.5
Sulfuric Acid, 60%	.52		282	93.5	12.5
Sulfuric Acid, 98%	.35	219	625	114.7	15.33
Trichloroethylene	.23	103	188	91.3	12.2
Trichloro-Trifluoroethane	.21	63	118	94.6	12.64
Turpentine	.42	133	319	54	7.2
Vegetable Oil	.43			57.5	7.69
Water	1.00	965	212	62.5	8.34
Xylene	.411	149.2	288	53.8	7.2

* At or near room temperature.

** Average value shown. Boils at various temperatures within the distillation range for the material.

9T: Gases and Vapors

SUBSTANCE	Chemical Formula or Symbol	Specific Heat at Constant Pressure	Density—Weight in lbs./cu. ft. at 70°F and Atmospheric Pressure	Specific Gravity Relative to Air
Acetylene (ethyne)	C_2H_2	.35	.0682	.907
Air		.24	.075	1.00
Ammonia	NH_3	.523	.0448	.596
Argon	A	.124	.1037	1.379
Butane	C_4H_{10}	.395	.1554	2.067
Carbon Dioxide	CO_2	.199	.115	1.529
Carbon Monoxide	CO	.248	.0727	.967
Chlorine	Cl_2	.115	.1869	2.486
Ethane	C_2H_6	.386	.0789	1.049
Ethylene	C_2H_4	.40	.0733	.975
Helium	He	1.25	.0104	.1381
Hydrogen Chloride	HCl	.191	.0954	1.268
Hydrogen	H_2	3.42	.0052	.0695
Hydrogen Sulphide	H_2S	.243	.0895	1.19
Methane	CH_4	.593	.0417	.554
Methyl Chloride	CH_3Cl	.24	.1342	1.785
Natural Gas		.56	.0502	.667
Nitric Oxide	NO	.231	.078	1.037
Nitrogen	N_2	.247	.0727	.967
Nitrous Oxide	N_2O	.221	.1151	1.53
Oxygen	O_2	.217	.0831	1.105
Propane	C_3H_8	.393	.1175	1.562
Propene (propylene)	C_3H_6	.358	.1091	1.451
Sulpher Dioxide	SO_2	.154	.1703	2.264
Water Vapor at 212 deg. F	H_2O	.482	.037	.489

Natural Gas values are representative. Specific contents of samplings are required for exact characteristics.

10T: Air Densities and Properties at Various Temperatures and Pressures

The density of gases and vapors other than air can be determined by multiplying the figure chosen from below, by the Specific Gravity Relative to Air column for the substance required from **9T.**

Temp. ° F	Specific Heat Btu/lb./°F	Gauge Pressure, PSI at 1 Atmosphere																		
		0	5	10	20	30	40	50	60	80	100	120	140	160	180	200	230	250	275	300
0	.240	.086	.116	.145	.204	.263	.321	.380	.439	.556	.674	.791	.909	1.026	1.144	1.261	1.437	1.555	1.701	1.848
10	.240	.085	.113	.142	.199	.257	.314	.372	.429	.544	.659	.774	.889	1.004	1.119	1.234	1.407	1.522	1.665	1.808
20	.240	.083	.111	.139	.195	.252	.308	.364	.420	.533	.646	.758	.871	.983	1.096	1.208	1.377	1.490	1.631	1.771
30	.240	.081	.109	.136	.191	.246	.302	.357	.412	.522	.632	.743	.853	.963	1.073	1.184	1.349	1.459	1.597	1.735
40	.240	.079	.106	.133	.187	.242	.296	.350	.404	.512	.620	.728	.836	.944	1.052	1.160	1.322	1.430	1.565	1.700
50	.240	.078	.104	.131	.184	.237	.290	.343	.396	.502	.608	.714	.820	.925	1.031	1.137	1.296	1.402	1.535	1.667
60	.240	.076	.102	.128	.180	.232	.284	.336	.388	.492	.596	.700	.804	.908	1.012	1.115	1.271	1.375	1.505	1.635
70	.240	.075	.100	.126	.177	.228	.279	.330	.381	.483	.585	.687	.789	.890	.992	1.094	1.247	1.349	1.447	1.600
80	.240	.074	.099	.124	.174	.224	.274	.324	.374	.474	.574	.674	.774	.874	.974	1.074	1.224	1.324	1.449	1.574
90	.240	.072	.097	.121	.170	.220	.269	.318	.367	.465	.563	.662	.760	.858	.956	1.055	1.202	1.300	1.423	1.546
100	.240	.071	.095	.119	.167	.216	.264	.312	.360	.457	.553	.650	.746	.842	.939	1.036	1.181	1.277	1.398	1.518
120	.240	.068	.092	.115	.162	.208	.255	.301	.348	.441	.534	.627	.721	.814	.907	1.000	1.140	1.233	1.349	1.466
140	.240	.066	.089	.111	.156	.201	.247	.291	.336	.426	.516	.607	.697	.787	.877	.967	1.102	1.192	1.304	1.417
160	.241	.064	.086	.108	.151	.195	.239	.282	.326	.413	.500	.587	.674	.761	.848	.936	1.067	1.153	1.262	1.371
180	.241	.062	.083	.104	.146	.189	.231	.273	.315	.400	.484	.570	.653	.737	.822	.906	1.033	1.117	1.223	1.328
200	.242	.060	.081	.101	.142	.183	.224	.265	.306	.388	.170	.551	.633	.715	.797	.879	1.002	1.084	1.186	1.288
220	.242	.058	.078	.098	.138	.178	.217	.257	.297	.376	.456	.535	.615	.694	.774	.853	.972	1.052	1.151	1.250
240	.242	.057	.076	.095	.134	.173	.211	.250	.288	.365	.443	.520	.597	.674	.751	.829	.944	1.022	1.118	1.215
260	.243	.055	.074	.093	.130	.168	.205	.243	.280	.355	.430	.505	.580	.656	.731	.806	.918	.993	1.087	1.181
280	.243	.054	.072	.090	.127	.163	.200	.236	.273	.346	.419	.492	.564	.638	.711	.784	.893	.966	1.058	1.149
300	.244	.052	.070	.088	.123	.159	.194	.230	.266	.337	.408	.479	.550	.621	.692	.763	.870	.941	1.030	1.119
320	.244	.051	.068	.086	.120	.155	.189	.224	.259	.328	.397	.467	.536	.605	.674	.744	.848	.917	1.003	1.090
340	.244	.050	.067	.083	.117	.151	.185	.219	.252	.320	.387	.455	.522	.590	.658	.725	.826	.894	.978	1.063
360	.246	.048	.065	.081	.114	.147	.180	.213	.246	.312	.378	.444	.510	.576	.641	.707	.806	.872	.954	1.037
380	.246	.047	.063	.079	.112	.144	.176	.208	.240	.305	.369	.433	.498	.562	.626	.691	.787	.851	.932	1.012
400	.247	.046	.062	.078	.109	.140	.172	.203	.235	.298	.360	.423	.486	.549	.612	.674	.769	.832	.910	.989
420	.247	.045	.060	.076	.107	.137	.168	.199	.229	.291	.352	.414	.475	.536	.598	.659	.751	.813	.889	.966
440	.247	.044	.059	.074	.104	.134	.164	.194	.224	.284	.344	.404	.464	.524	.584	.644	.735	.795	.870	.945
460	.248	.043	.058	.073	.102	.131	.161	.190	.220	.278	.337	.396	.454	.513	.572	.630	.719	.777	.851	.924
480	.248	.042	.057	.071	.100	.128	.157	.186	.215	.272	.330	.387	.445	.502	.560	.617	.703	.761	.833	.905
500	.249	.041	.055	.070	.098	.126	.154	.182	.210	.267	.323	.379	.435	.492	.548	.604	.689	.745	.815	.886
520	.249	.041	.054	.068	.096	.123	.151	.178	.206	.261	.316	.371	.426	.482	.537	.592	.675	.730	.799	.868
540	.249	.040	.053	.067	.094	.121	.148	.175	.202	.256	.310	.364	.418	.472	.526	.580	.661	.715	.783	.850
560	.250	.039	.052	.065	.092	.118	.145	.171	.198	.251	.304	.357	.410	.463	.516	.569	.648	.701	.767	.834
580	.251	.038	.051	.064	.090	.116	.142	.168	.194	.246	.298	.350	.402	.454	.506	.558	.636	.688	.753	.818
600	.252	.037	.050	.063	.088	.114	.139	.165	.190	.241	.292	.343	.394	.445	.496	.547	.624	.675	.739	.802
620	.252	.037	.049	.062	.087	.112	.137	.162	.187	.237	.287	.337	.387	.437	.487	.537	.612	.662	.725	.787
640	.252	.036	.048	.061	.085	.110	.134	.159	.183	.233	.281	.331	.380	.429	.478	.527	.601	.650	.712	.773
660	.253	.035	.048	.060	.084	.108	.132	.156	.180	.228	.277	.325	.373	.421	.470	.518	.590	.639	.699	.759
680	.252	.035	.047	.059	.082	.106	.130	.153	.177	.224	.272	.319	.367	.414	.461	.509	.580	.627	.687	.746
700	.254	.034	.046	.058	.081	.104	.127	.151	.174	.221	.267	.314	.360	.407	.453	.500	.570	.616	.675	.733
720	.254	.034	.045	.057	.079	.102	.125	.148	.171	.217	.263	.308	.354	.400	.446	.492	.560	.606	.663	.721
740	.255	.033	.044	.056	.078	.101	.123	.146	.168	.213	.258	.303	.348	.393	.438	.483	.551	.596	.652	.709
760	.256	.033	.044	.055	.077	.100	.121	.143	.165	.210	.254	.298	.343	.387	.431	.475	.542	.586	.642	.697
780	.256	.032	.043	.054	.076	.097	.119	.141	.163	.206	.250	.298	.337	.381	.424	.468	.533	.577	.631	.686
800	.257	.032	.042	.053	.074	.096	.117	.139	.160	.203	.246	.289	.332	.375	.417	.460	.525	.568	.621	.675
820	.257	.031	.042	.052	.073	.094	.115	.137	.158	.200	.242	.284	.327	.369	.411	.453	.517	.559	.611	.664
840	.257	.031	.041	.051	.072	.093	.114	.134	.155	.197	.238	.280	.322	.363	.405	.446	.508	.550	.602	.654
860	.258	.030	.040	.051	.071	.091	.112	.132	.153	.194	.235	.276	.317	.358	.399	.439	.501	.542	.593	.644
880	.259	.030	.039	.050	.070	.090	.110	.130	.151	.191	.231	.272	.312	.352	.393	.433	.494	.534	.584	.634
900	.260	.029	.039	.049	.069	.089	.109	.129	.148	.188	.228	.268	.307	.347	.387	.427	.486	.526	.575	.625
920	.260	.029	.039	.048	.068	.088	.107	.127	.146	.185	.225	.264	.303	.342	.381	.420	.479	.518	.567	.616
940	.260	.028	.038	.048	.067	.086	.106	.125	.144	.183	.221	.260	.299	.337	.376	.414	.472	.511	.559	.607
960	.261	.028	.037	.047	.066	.085	.104	.123	.142	.180	.218	.256	.294	.332	.370	.408	.466	.504	.551	.599
980	.261	.028	.037	.046	.065	.084	.103	.121	.140	.178	.215	.253	.290	.328	.365	.403	.459	.497	.544	.590
1000	.262	.027	.036	.046	.064	.083	.101	.120	.138	.175	.212	.249	.286	.323	.360	.397	.453	.490	.536	.582
1020	.262	.027	.036	.045	.063	.082	.100	.118	.136	.173	.209	.245	.282	.319	.355	.392	.477	.483	.529	.574
1040	.263	.026	.035	.044	.063	.081	.099	.117	.135	.171	.207	.243	.279	.315	.351	.387	.441	.477	.522	.567
1060	.264	.026	.035	.044	.062	.079	.097	.115	.133	.168	.204	.239	.275	.311	.346	.382	.435	.470	.515	.559
1080	.264	.026	.035	.043	.060	.078	.096	.114	.131	.166	.201	.236	.271	.306	.342	.377	.429	.464	.508	.552
1100	.265	.025	.034	.043	.060	.077	.095	.112	.129	.164	.199	.233	.268	.303	.337	.372	.424	.458	.502	.545
1120	.265	.025	.034	.042	.059	.076	.094	.111	.128	.162	.196	.230	.265	.299	.333	.367	.418	.453	.495	.538
1140	.265	.025	.033	.042	.059	.075	.092	.109	.126	.160	.194	.227	.261	.295	.329	.363	.413	.447	.489	.531
1160	.266	.025	.033	.041	.058	.075	.091	.108	.125	.158	.191	.225	.258	.291	.325	.358	.408	.441	.483	.525
1180	.266	.024	.032	.041	.057	.074	.090	.107	.123	.156	.189	.222	.255	.288	.321	.354	.403	.436	.477	.518
1200	.267	.024	.032	.040	.056	.073	.089	.105	.122	.154	.187	.219	.252	.284	.317	.349	.398	.431	.471	.512

Weight in pounds per cubic foot

11T:Thermal Conductivity of Various Substances

The following is a listing of the ratios of how fast heat is conducted through each material. The information is useful as a comparison of one substance to another. Large numbers indicate greater conductivity characteristics.*

Air	0.0568	Coal	0.30
Aluminum	480.0	Coke, powdered	0.44
Antimony	44.2	Concrete, cinder	0.81
Argon	0.0389	Concrete, stone	2.2
Asbestos, paper	0.6	Copper	918.0
Bismuth	17.7	Cotton wool	0.043
Blotting paper	0.15	Cotton batting, loose	0.11
Brass	204.0	Cotton batting, packed	0.072
Brick, aluminum	2.0	Earth, average	4.0
Brick, building	1.5	Eiderdown, loose	0.108
Brick, carborundum	23.0	Eiderdown, packed	0.045
Brick, fire	3.1	Feathers	0.16
Brick, graphite	25.0	Felt	0.22
Brick, magnesia	7.1	Fiber, red	1.1
Brick, silica	2.0	Flannel	0.035
Cadmium	222.0	German silver	80.0
Carbon gas	130.0	Glass, crown	2.5
Carbon graphite	290.0	Glass, flint	2.0
Carbon dioxide	0.0307	Gold,	700.0
Carbon monoxide	0.0499	Granite	4.5
Carborundum	0.50	Gutta percha	0.48
Cardboard	0.50	Gypsum	3.1
Cement, portland	0.17	Hair	0.15
Chalk	0.28	Hair cloth, felt	0.042
Charcoal, powdered	0.22	Helium	0.339
Clinkers, small	1.1	Horn	0.087
		Hydrogen	0.327

Ice	3.9	Petroleum	0.39
Iron, pure	161.0	Pumice stone	0.43
Iron, cast	109.0	Quartz, pr. to axis	30.0
Iron, wrought	144.0	Quartz, perp. to axis	160.0
Lamp black	0.07	Rubber, hard	0.43
Lead	83.0	Rubber, Para	0.38
Leather, cowhide	0.42	Sand, dry	0.86
Leather, chamois	0.15	Sandstone	5.5
Lime	0.29	Sawdust	0.14
Linen	0.21	Silica, fused	2.55
Magnesia	0.3	Silk	0.13
Magnesium, carb	0.23	Silver	974.0
Marble	8.4	Slate	4.8
Mercury	19.7	Snow	0.60
Mica	0.86	Steel	115.0
Nickel	142.0	Terra Cotta	2.3
Nitrogen	0.0524	Tin	155.0
Oxygen	0.0563	Water	1.6
Paper	0.31	Wood, fir, with grain	0.30
Paraffin	0.62	Wood, fir, cross grain	0.09
Pasteboard	0.45	Wool, sheep	0.14
Plaster of Paris	0.42	Wool, mineral	0.11
Plaster, mortar	1.3	Wool, steel	0.20
Platinum	170.0	Woolen, loose, wadding	0.12
Plumbago	1.0	Zinc	265.0
Poplox (Na2Si03)	0.13		
Porcelain	4.3		

** Expressed in gram–calories/second/square centimeter/centimeter/°C*