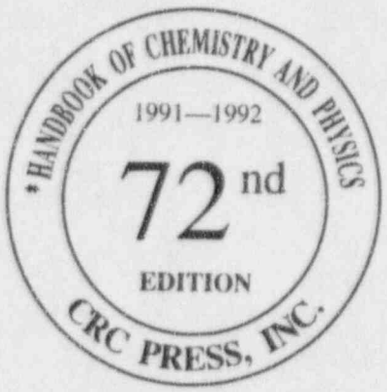
I- NUSBA-153

CRC Handbook of Chemistry and Physics

1991-92

A Ready-Reference Book of Chemical and Physical Data



Editor-in-Chief

David R. Lide, Ph.D.

CRC Press
Boca Raton Ann Arbor Boston

COMMERCIAL METALS AND ALLOYS
Miscellaneous Properties (Typical Values)

Common name and classification	Thermal conductivity			Density	Coeff. of linear expansion, μ in./in. °F	Electrical resistivity, microhm-cm	Modulus of elasticity, millions of psi	Approximate melting point	
	W/cm K	Btu/hr ft °F	cal/s cm K	g/cm³				°F	°C
Ingot iron (included for comparison)	1.3	77	0.32	7.86	6.8	9	30	2800	1535
Plain carbon steel AISI–SAE 1020	1.0	56	0.23	7.86	6.7	10	30	2760	1515
Stainless steel type 304	0.3	19	0.08	8.02	9.6	72	28	2600	1427
Cast gray iron ASTM A48–48, Class 25	0.8	48	0.20	7.2	6.7	67	13	2150	1177
Malleable iron ASTM A47				7.32	6.6	30	25	2250	1232
Ductile cast iron ASTM A339, A395	0.6	34	0.14	7.2	7.5	60	25	2100	1149
Ni-resist cast iron, type 2	0.7	41	0.17	7.3	9.6	170	15.6	2250	1232
Cast 28-7 alloy (HD) ASTM A297–63T	0.04	2	0.01	7.6	9.2	41	27	2700	1482
Hastelloy C	0.2	10	0.04	3.94	6.3	139	30	2350	1290
Inconel X, annealed	0.3	17	0.07	8.25	6.7	122	31	2550	1399
Haynes Stellite alloy 25 (L605)	0.2	10	0.04	9.15	7.61	88	34	2500	1371
Aluminum alloy 3003, rolled ASTM B221	2.8	164	0.68	2.73	12.9	4	10	1200	649
Aluminum alloy 2017, annealed ASTM B221	3.0	174	0.72	2.8	12.7	4	10.5	1181	638
Aluminum alloy 380 ASTM SC84B	1.8	102	0.42	2.7	11.6	7.5	10.3	1050	566
Copper ASTM B152, B124, B133, B1, B2, B3	4.0	230	0.96	8.91	9.3	1.7	17	1900	1038
Yellow brass (high brass) ASTM B36, B134, B135	2.2	126	0.52	8.47	10.5	7	15	1710	932
Aluminum bronze ASTM B169, alloy A; ASTM B124, B150	1.3	75	0.31	7.8	9.2	12	17	1902	1039
Beryllium copper 25 ASTM B194	0.2	12	0.05	8.25	9.3	–	19	1700	927
Nickel silver 18% alloy A (wrought) ASTM B122, No. 2	0.6	34	0.14	8.8	9.0	29	18	2030	1110
Cupronickel 30%	0.5	31	0.13	8.95	8.5	35	22	2340	1282
Red brass (cast) ASTM B30, No. 4A	1.3	77	0.32	8.7	10	11	13	1825	996
Chemical lead	0.6	36	0.15	11.35	16.4	21	2	621	327
Antimonial lead (hard lead)	0.5	31	0.13	10.9	15.1	23	3	554	290
Solder 50–50	0.8	48	0.20	8.89	13.1	15	–	420	216
Magnesium alloy AZ31B	1.4	82	0.34	1.77	14.5	9	6.5	1195	646
K Monel	0.3	19	0.08	8.47	7.4	59	26	2430	1332
Nickel ASTM B160, B161, B162	1.1	63	0.26	8.89	6.6	10	30	2625	1441
Cupronickel 55–45 (Constantan)	0.4	24	0.10	8.9	8.1	49	24	2300	1260
Commercial titanium	0.3	19	0.08	5	4.9	80	16.5	3300	1816
Zinc ASTM B69	1.2	70	0.29	7.14	18	6	–	788	420
Zirconium, commercial	0.3	19	0.08	6.5	2.9	41	12	3350	1843

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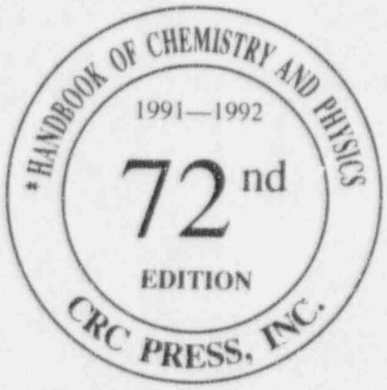

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Copper ASTM B152, B124, B133, B1, B2, B3	4.0	230	0.96	8.91	9.3	1.7	17	1980	1082	309[a]
Yellow brass (high brass) ASTM B36, B134, B135	2.2	126	0.52	8.47	10.5	7	15	1710	932	309S[a]
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Zinc ASTM B69	1.2	70	0.29	7.14	18	6	–	788	420	348[a]
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										405[a]
										410[a]
										414[b]
										416[b]
										416 Se[b]
										420[a]
										430[a]
										430F[a]
										430F Se[a]
										431[b]
										440A[b]