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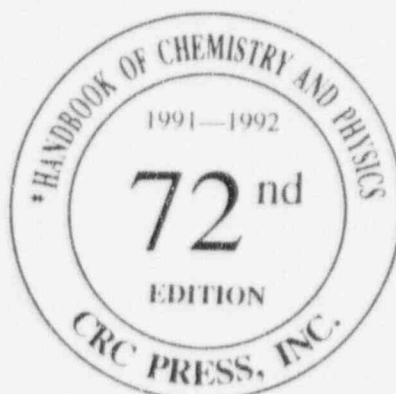
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# CRC Handbook of Chemistry and Physics

1991-1992

A Ready-Reference Book of Chemical and Physical Data



Editor-in-Chief

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I.W.#-153

CRC Press

Boca Raton Ann Arbor Boston

690145

NUCLEAR REGULATORY COMMISSION

Docket No. 50-424/425-OLA-3

EXHIBIT NO. 4-153

In the matter of Georgia Power Co. et al., Vogtle Units 1 & 2

☐ Staff ☐ Applicant ☒ Intervenor ☐ Other

☐ Identified ☒ Received ☐ Rejected

Reporter SD

Date 10/6/95 Witness

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# COMMERCIAL METALS AND ALLOYS Miscellaneous Properties (Typical Values)

Common name and classification	Thermal conductivity			Density g/cm <sup>3</sup>	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					°F	°C
Ingot iron (included for comparison)	1.3	77	0.32	7.86	6.8	9	30	2800	1538
Plain carbon steel	1.0	56	0.23	7.86	6.7	10	30	2740	1505
AISI-SA 1020									
Stainless steel type 304	0.3	19	0.08	8.02	9.6	72	28	2660	1461
Cast gray iron	0.8	48	0.20	7.2	6.7	67	13	2116	1164
ASTM A48-48, Class 25									
Malleable iron				7.32	6.6	30	25	2254	1235
ASTM A47									
Ductile cast iron	0.6	34	0.14	7.2	7.5	60	25	2100	1155
ASTM A339, A395									
Ni-resist cast iron, type 2	0.7	41	0.17	7.3	9.6	170	15.6	2250	1232
Cast 28-7 alloy (HID)	0.04	2	0.01	7.6	9.2	41	27	2700	1482
ASTM A297-63T									
Hastelloy C	0.2	10	0.04	3.94	6.3	139	30	2150	1178
Inconel X, annealed	0.3	17	0.07	8.25	6.7	122	31	2530	1389
Haynes Stellite alloy 25 (L605)	0.2	10	0.04	9.15	7.61	88	34	2500	1371
Aluminum alloy 3003, rolled	2.8	164	0.68	2.73	12.9	4	10	1300	704
ASTM B221									
Aluminum alloy 2017, annealed	3.0	174	0.72	2.8	12.7	4	10.5	1105	603
ASTM B221									
Aluminum alloy 380	1.8	102	0.42	2.7	11.6	7.5	10.3	1050	566
ASTM SC84B									
Copper	4.0	230	0.96	8.91	9.3	1.7	17	1980	1080
ASTM B152, B124, B133, B1, B2, B3									
Yellow brass (high brass)	2.2	126	0.52	8.47	10.5	7	15	1750	955
ASTM B36, B134, B135									
Aluminum bronze	1.3	75	0.31	7.8	9.2	12	17	1900	1040
ASTM B169, alloy A; ASTM B124, B150									
Beryllium copper 25	0.2	12	0.05	8.25	9.3	-	19	1700	928
ASTM B194									
Nickel silver 18% alloy A (wrought)	0.6	34	0.14	8.8	9.0	29	18	2030	1111
ASTM B122, No. 2									
Cupronickel 30%	0.5	31	0.13	8.95	8.5	35	22	2240	1227
Red brass (cast)	1.3	77	0.32	8.7	10	11	13	1825	1002
ASTM B30, No. 4A									
Chemical lead	0.6	36	0.15	11.35	16.4	21	2	671	355
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	-	430	216
Magnesium alloy AZ31B	1.4	82	0.34	1.77	14.5	9	6.5	1160	637
K Monel	0.3	19	0.08	8.47	7.4	58	26	2430	1333
Nickel	1.1	63	0.26	8.89	6.6	10	30	2625	1441
ASTM B160, B161, B162									
Cupronickel 55-45 (Constantan)	0.4	24	0.10	8.9	8.1	49	24	2700	1482
Commercial titanium	0.3	19	0.08	5	4.9	80	16.5	3100	1655
Zinc	1.2	70	0.29	7.14	18	6	-	785	419
ASTM B69									
Zirconium, commercial	0.3	19	0.08	6.5	2.9	41	12	3390	1866