

TABLE VI. LINEAR COEFFICIENT OF THERMAL EXPANSION

Element	$\alpha \times 10^6$ ( $^{\circ}\text{C}^{-1}$ )	Ref.
3 Li	45	1
4 Be	11.5	2, 3
5 B	8.3	3, 4, 5
6 C(g)	$3.8 \pm 3.1$	4, 5, 6
6 C(d)	$1.19 \pm 0.01$	5, 6
11 Na	$70.6 \pm 0.6$	1, 4, 5
12 Mg	$25.7 \pm 0.7$	1, 5, 6
13 Al	$23.1 \pm 0.5$	1, 7, 8, 9
14 Si	$3.07 \pm 0.07^a$	10, 11
15 P(w)	$124.5 \pm 0.5$	4, 6
15 P(r)	$(66.5)^b$	—
16 S(r)	$64.1 \pm 0.1$	4, 6
16 S(m)	$(63)^b$	—
19 K	83.0	1, 4
20 Ca	$22.4 \pm 0.1$	1, 4
21 Sc	$10.0^c$	12
22 Ti	$8.35 \pm 0.15$	13
23 V	8.3	14
24 Cr	$8.4^d$	15
25 Mn	$22.6 \pm 0.3$	16
26 Fe	11.7	1, 4, 8
27 Co	12.4	1, 5, 6
28 Ni	$12.7 \pm 0.2$	1, 6, 8
29 Cu	$16.7 \pm 0.3$	1, 4, 5, 6, 8
30 Zn	29.7	1
31 Ga	$18.1 \pm 0.2$	1, 3, 4
32 Ge	5.75	7
33 As	$4.28 \pm 0.42$	4, 6
34 Se	$36.9 \pm 0.1$	4, 6
37 Rb	$88.1 \pm 1.9$	4, 6
38 Sr	20	17
39 Y	$12.0^e$	12
40 Zr	$5.78 \pm 0.07$	18, 19
41 Nb	$7.07 \pm 0.05$	1, 20, 21
42 Mo	$4.98 \pm 0.15$	1, 4, 6, 22
43 Tc	$(8.06)^b$	—
44 Ru	$9.36 \pm 0.27$	4, 6
45 Rh	$8.40 \pm 0.10$	1, 4, 6
46 Pd	$11.5 \pm 0.4$	1, 4, 6
47 Ag	$19.2 \pm 0.4$	1, 4, 5, 6, 8
48 Cd	$30.6 \pm 1.3$	1, 4, 5, 6
49 In	$31.4 \pm 1.4$	1, 4, 5
50 Sn(g)	$5.3^d$	23
50 Sn(w)	$21.2^e$	24
51 Sb	10.9	1, 6

TABLE VI. LINEAR COEFFICIENT OF THERMAL EXPANSION—Continued

Element	$\alpha \times 10^6$ ( $^{\circ}\text{C}^{-1}$ )	Ref.
52 Te	$16.77 \pm 0.03$	4, 5, 6
55 Cs	97	1, 3, 4
56 Ba	$18.8 \pm 0.8$	5, 25
57 La	$10.4^a$	12
58 Ce( $\gamma$ )	8.5	26
59 Pr	$6.79^a$	12
60 Nd	$9.98^a$	12
61 Pm	$(9.0)^b$	—
62 Sm	10.4	27
63 Eu	$33.1^a$	12
64 Gd	$8.28^{a,c}$	12
65 Tb	$10.3^a$	12
66 Dy	$10.0^a$	12
67 Ho	$10.7^a$	12
68 Er	$12.3^a$	12
69 Tm	$13.3^a$	12
70 Yb	$24.96 \pm 0.04$	12, 26
71 Lu	$8.12^a$	12
72 Hf	$6.01 \pm 0.16$	3, 19, 28, 29
73 Ta	$6.55 \pm 0.05$	1, 4, 20, 29
74 W	$4.59 \pm 0.03$	1, 4, 29, 30
75 Re	$6.63 \pm 0.06$	1, 4, 31
76 Os	$4.7 \pm 0.1$	1, 4
77 Ir	$6.63 \pm 0.12$	1, 4, 5
78 Pt	$8.95 \pm 0.05$	1, 4, 6, 25
79 Au	$14.1 \pm 0.1$	1, 4, 5, 25, 32
80 Hg	61 $^f$	1, 25
81 Tl	$29.4 \pm 1.0$	1, 4, 5, 6
82 Pb	$29.0 \pm 0.3$	1, 4, 5, 25, 33
83 Bi	$13.41 \pm 0.09$	4, 5, 6, 25
84 Po	$23.0 \pm 1.5$	34
87 Fr	$(102.)^b$	—
88 Ra	$(20.2)^b$	—
89 Ac	$(14.9)^b$	—
90 Th	$11.2 \pm 0.4$	35
91 Pa	$(7.3)^b$	—
92 U	$12.6 \pm 0.4$	1, 36
93 Np	27.5	37
94 Pu	55	38

<sup>a</sup> X-ray data.<sup>b</sup> Estimated value; see text for further discussion.<sup>c</sup> See text for details concerning the derivation of this value.<sup>d</sup> Value at 215°K.<sup>e</sup> Value at 361°K; see text for more details.<sup>f</sup> Value for solid mercury at its melting point, 234°K.