

TABLE 8. THE EFFECT OF PRESSURE ON THE IDEAL RESISTIVITY OF B.C.C. SODIUM

specimen	T (°K)	$-\frac{\partial \ln \rho_i}{\partial p}$ (10^{-5} atm^{-1})	$-B/A$ (10^{-5} atm^{-1})	$\frac{\partial \ln \rho_i'}{\partial \ln V}$
Na (1)	34.77	9.7 ± 0.2	8 ± 2	6.93 ± 0.15
	48.03	9.1 ± 0.2	7 ± 3	6.50 ± 0.15
	58.10	8.0 ± 0.2	7 ± 2	5.64 ± 0.15
	78.3	7.6 ± 0.2	10 ± 2	5.35 ± 0.15
	84.9	7.4 ± 0.2	6 ± 2	5.15 ± 0.15
	155.1	7.1 ± 0.2	6 ± 2	4.79 ± 0.15
	272.0	7.5 ± 0.2	6 ± 2	4.50 ± 0.15
Na (2)	55.57	8.5 ± 0.2	7 ± 1	6.00 ± 0.15
	78.0*	7.6 ± 0.1	6.5 ± 0.5	5.35 ± 0.07
	273.4	7.4 ± 0.1	6.0 ± 0.5	4.43 ± 0.07
Na (3)	77.0*	7.6 ± 0.1	6.5 ± 0.5	5.35 ± 0.07
	273.4	$7.2_5 \pm 0.1$	6.0 ± 0.5	4.32 ± 0.07
	(273.4)†	—	—	(4.60 ± 0.07)
Na (9)	63.07	7.9 ± 0.1	6.5 ± 1.5	5.57 ± 0.07
	78.7	7.4 ± 0.1	6.3 ± 0.5	5.21 ± 0.07
Bridgman‡	273.2	7.4 ± 0.2	9 ± 5	—
	303.2	7.9 ± 0.2	10 ± 5	—
	313.2	7.9 ± 0.2	10 ± 5	—
	353.2	8.8 ± 0.2	11 ± 5	—

* Average values from three different runs.

† This point corresponds to the density at 273.4 °K under zero pressure.

‡ Results from experiment on bare wires (Bridgman 1921).

TABLE 9. THE EFFECT OF PRESSURE ON THE IDEAL RESISTIVITY OF SODIUM IN THE TWO-PHASE REGION

specimen	f , fraction of h.c.p sodium in specimen at zero pressure	T (°K)	$-\frac{\partial \ln \rho_i}{\partial p}$ (10^{-5} atm^{-1})	$-B/A$ (10^{-5} atm^{-1})	$\frac{\partial \ln \rho_i}{\partial \ln V}$
Na (2)	0.5 ± 0.1	20.35	10.1 ± 0.4	9 ± 2	7.2 ± 0.3
	0.0 ± 0.05	20.35	11.4 ± 0.4	—	$8.1_5 \pm 0.3$
Na (3)	0.1	20.35	11.3 ± 0.3	13 ± 2	8.1 ± 0.2
Na (9)	0.3_5	20.35	9.9 ± 0.2	8 ± 2	7.1 ± 0.2
Na (1)	$(0.3_5)^*$	20.35	10.3 ± 0.4	10 ± 3	$7.3_5 \pm 0.3$
	—	24.70	10.6 ± 0.3	10 ± 2	$7.5_5 \pm 0.2$
Na (b.c.c.)†	0	20.35	11.5 ± 0.4	—	8.2 ± 0.3
	0	24.70	11.6 ± 0.6	—	8.2 ± 0.4
Na (hex)†	1.0	20.35	7.8 ± 0.8	—	5.6 ± 0.6

* Estimated by interpolation of $\partial \ln \rho_i / \partial p$ at 20.35 °K.

† N.B. These values have been calculated on the assumption that there is no change of phase composition of the specimens with pressure (see text).