

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 ± 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 ± 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 ± 0.3
	—	24.70	10.6 ± 0.3	10 ± 2	7.5 ₅ ± 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).

gan
 $\equiv A + \frac{1}{3}\beta$ where β is the com-
 mens in the two-phase region
 phase present. This was esti-
 of the specimen at 20.35 °K,

REAL RESISTIVITY OF B.C.C.

(4)	(5)
1.570 ₃ (1.000)	1.570 ₃ (1.000)
—	—
—	—
—	—
—	—
—	—
—	1.423 ₇ (1.034)
—	—
—	—
—	—
—	1.249 ₈ (1.051)
—	—
—	—
—	—
1.113 ₁ (1.041 ₅)	—
—	—
1.021 ₉ (1.036)	—
—	—
—	—
—	0.795 ₄ (1.071)
—	—
—	—

at 273.15 °K (except columns 2

specimen Na (4), normalized at
 Shaw & Pearson (1956), capillary
 from the residual resistivity.
 Itjer & Kamerlingh Onnes (1924),

the correlation seemed strongly
 different pressure coefficients
 the two pure phases are given
 be made about the results for
 the ideal resistivities of the two
 sibly greater amount than the