of the bomb temperature during a run. Full details of the apparatus and the technique have been given by Dugdale & Hulbert (1957) and by Dugdale & Gugan (1957).

2·4. *The absolute resistivities*

The absolute resistivities of our different specimens were measured at room temperature. The measurements were made on thick extruded rods of metal in the way described by Dugdale, Gugan & Okumura (1961).

3. Experimental results

The numerical results we give in this paper are smoothed values from our original data. We explain in appendix A how we have obtained the results tabulated. In appendix B we give details of the values we have used for the equations of state of the metals we have studied; we use this information in calculating the resistive properties of our specimens under the conditions of constant density.

We present our results for the different metals in the following sections: 3·1, potassium; 3·2, sodium; 3·3, lithium. In each section we compare our data with those of other observers where these exist.

3·1. *Potassium*

Details of the specimens we have studied are given in table 1.

Table 1. Details of the potassium specimens

specimen	$R_{0\,°K}/R_{273\,°K}$	comments	source of material
K (1)	0·124	commercial purity (~ 0·5 % sodium)	Messrs A. D. Mackay and Co., New York
K (2)*	$7\cdot5\times10^{-4}$	—	Mine Safety Appliances Ltd., Toronto
K (3)	$7\cdot8\times10^{-4}$	—	Mine Safety Appliances Ltd., Toronto
K (4)	$8\cdot2\times10^{-4}$	—	Mine Safety Appliances Ltd., Toronto
K (5)	$8\cdot5\times10^{-4}$	—	Mine Safety Appliances Ltd., Toronto
K (6)	—	same stock as K (2) to K (5)	

* The absolute resistivity of a specimen from this stock was $7\cdot1_9\times10^{-6}$ Ω cm at 22·0 °C (corrected for residual resistivity). The precision of this result is about 1 %. Previous values at this temperature are $7\cdot0_8\times10^{-6}$ Ω cm (Hackspill 1910) and $7\cdot5_7\times10^{-6}$ Ω cm (Guntz & Broniewski 1909). Cf. also MacDonald *et al.* (1956).

3·1·1. *The temperature dependence of ρ_i*

Three specimens were studied in these measurements, namely K (3), K (4) and K (6); K (6) we measured only between about 8 and 20 °K. The results were in satisfactory agreement in the region where they overlapped. The calculated values of ρ_i/T are given in table 2; the resistivity values have been normalized to our observed value of the absolute resistivity at room temperature (see table 1). The results are illustrated in figure 1.

Several anomalies in the temperature dependence of the resistivity of potassium have been reported: (*a*) kinks in the resistivity–temperature curve below 20 °K