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Pressure Dependence of Resistivity of Indium Antimonide to 70,000 Atmospheres

THE pressure dependence of the resistivity of indium antimonide has been measured by Keyes[1] up to 12,000 atmospheres. We have extended the range to 70,000 atmospheres. In addition to the type of change found by Keyes we have observed a resistance change on melting when the temperature was considerably below the zero pressure melting-point of 796° K.

The measurements were made in a tetrahedral apparatus constructed at the National Physical Laboratory following a design of the National Bureau of Standards[2]. This allows the use of a standard hydraulic press. In our apparatus the pyrophyllite

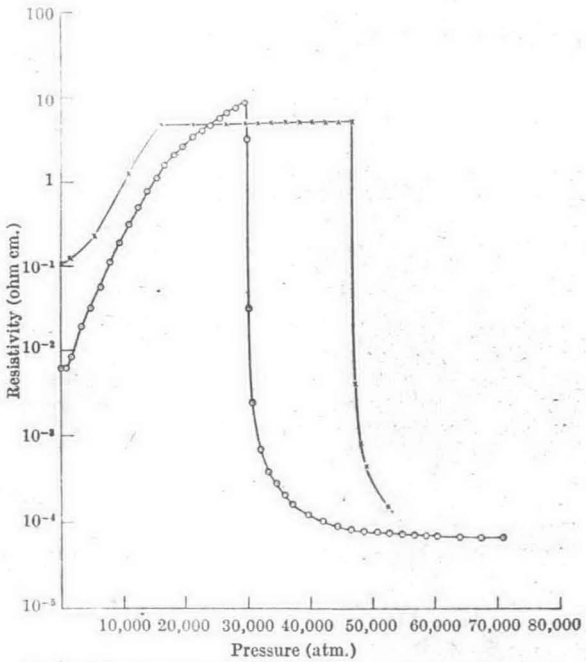

Fig. 1. Behaviour of single-crystal specimens of indium antimonide at two temperatures. *n* type ~ 4 × 10^{14} electrons/c.c. Specimen size, 1¼ mm. × 1½ mm. × 3 mm. ○, 293° K.; ×, 184° K.