

substance: MnO₂

property: transport properties

Single crystal **conductivity** data: Fig. 1. The marked anomaly at 92...95 K is associated with magnetic ordering (see also above under heat capacity), with the major loss mode in the 50...100 K range being magnon scattering. Resistance vs. pressure: Fig. 2. Studies of powdered samples are bedevilled by the formation of Mn₂O₃ at grain boundaries [70K]. At – 50...+ 125°C, activation energy $\approx 0.04\text{eV}$ found [70K].

Seebeck effect: for low resistivity samples $S \approx -0.60\text{ mV/K}$ [70K] for polycrystalline samples.

Hall mobility: $\mu_{\text{H}} \approx 1... 10\text{ cm}^2/\text{V s}$ [58D, 70K] for polycrystalline samples.

References:

- 58D Das, J. N.: Z. Phys. 151 (1958) 345.
63M Minomura, S., Drickamer, H. G.: J. Appl. Phys. 34 (1963) 3043.
69R Rogers, D. B., Shannon, R. D., Sleight, A.W., Gillson, J. L.: Inorg. Chem. 8 (1969) 841.
70K Klose, P. H.: J. Electrochem. Soc. 117 (1970) 854.

Fig. 1.

MnO₂. Resistivity vs. temperature for a single crystal [69R]. Orientation not specified.

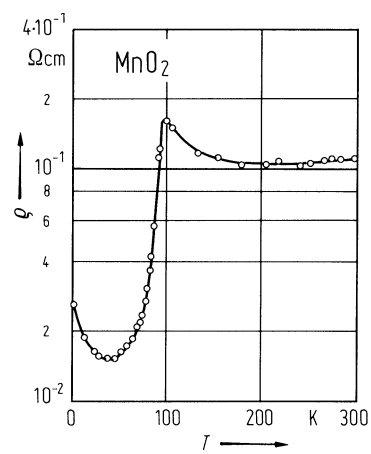


Fig. 2.

MnO₂. Resistance (arb. units) vs. pressure [63M].

