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CUSTOM TRANSLATION

PHYSICS

ELECTRICAL AND GALVANOMAGNETIC PROPERTIES OF CHROMIUM SULFIDES (E)

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As regards values of specific electrical resistance, the chromium sulfides occupy an intermediate place between metals and semiconductors ; their electrical and magnetic properties depend considerably on changes in structure. By varying the composition of the compounds and the conditions of heat treatment, we may obtain paramagnetic or ferromagnetic compounds with electrical conductivity of the semiconducting or metallic type. A characteristic feature of the electrical properties of these compounds is a change in the sign of the temperature coefficient of electrical conductivity /1/, similar to PbS /2/ and solid solutions of Te-Se. In order to understand the mechanism underlying the electrical conductivity of chromium-sulfur compounds, we must study not only their electrical but also their galvanomagnetic properties. It is particularly interesting to study the electrical conductivity at low temperatures since the present principle of separating substances into metals