

Citation:

Huizinga, M.J., Electrolytic phenomene of the molybdenite-detector, in:
KNAW, Proceedings, 19 I, 1917, Amsterdam, 1917, pp. 512-513

some minutes, a small quantity of a dark blue liquid will appear on the surface of the crystal in which small gasbubbles rise. In one case e.g. the strength of the current was 6 milliampères, the impressed E. M. F. being 3 volt. If this E. M. F. between crystal and platinum fell to below 1,3 volt then the disengagement of gas could no longer be seen. If the E. M. F. of 3 volt was reversed, the current was only 0,5 milliampères, the disengagement of gas became less and could no longer be seen when the E. M. F. fell to 2 à 2,5 volt. By these experiments it is proved that in the contact molybdenite-metal, opposite to the direction of the primary current, an E. M. F. exists, due to polarisation, in consequence of electrolysis; the value of this E. M. F. of polarisation differs according to the direction of the primary current. By this the unipolar conduction has been reduced to well-known phenomena.

The inquiry into the electrolysis as appearing here, is not yet complète; though it has been found that the phenomena as described here, exactly agree with those obtained if the platinum point is brought into contact with the molybdenite not directly, but by means of a drop of acidulated water. Again the resistance is least in the direction from MoS_2 to Pt ; on the outer edge of the drop one can at first observe a green, after some time a dark-blue change of colour; without doubt an oxidation product of the mineral. In order to get the disengagement of gas the E. M. F. must be at least 1,2 volt; at the platinum point the colour of the liquid is somewhat brownish. If the current is reversed, then its strength possesses a greater value for some seconds, only to fall suddenly to a very small value. The disengagement of gas may be best seen on the side of the crystal and the liquid will also assume a brown colour on that side. In this case the disengagement of gas will only take place with an E. M. F. of 2 volt.

The intention is to extend the investigation to other combinations.

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