

ABSTRACT

The experimental fusion curves for lead and zinc have been obtained to 105,000 atmospheres. The fusion point in lead was detected by means of a sharp change in electrical resistance accompanied by a sharp rise in temperature, using the lead sample as its own heater. In zinc the fusion points were detected by heating the sample indirectly and observing latent heat on a temperature vs. time strip-chart recording. The melting point of lead rises smoothly from the normal value of 327.3°C to 730°C at 105,000 atmospheres. The melting point of zinc also rises smoothly from 419.5°C to 670°C at 105,000 atmospheres. No phase transitions were observed for lead or zinc.

Simon's equation was fitted to each of the afore mentioned fusion curves with the results that for lead $a = 7,560$ atmospheres and $c = 3.38$. For zinc $a = 16,400$ atmospheres and $c = 4.19$.

The maximum deviation between the experimental curve and the curve from Simon's equation is 5.7% for lead and 0.7% for zinc.

APPROVED

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