

Equation of state for zinc at high energy densities

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Thermodynamic model of equation of state and phase transitions of zinc is necessary for numerical simulations of hydrodynamic processes in this material under intense pulsed influences [1]. In the present work, a semiempirical approach [2] is used for constructing the thermodynamic potential Helmholtz free energy for zinc with taking into account melting, evaporation and ionization effects. The multiphase equation of state is built, and calculations of parameters of the phase diagram in a wide range of densities and temperatures are carried out. A comparison of calculated results with available data from dynamic experiments with Zn in shock and release waves is made.

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REFERENCES

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