

# A multiphase (graphite, diamond, liquid + evaporation) equation of state for carbon

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The paper presents a semi-empirical multiphase equation of state (EOS) for carbon. The equation includes two solid phases, graphite and diamond, and the liquid phase with evaporation. It is derived with the use of available experimental data, data from calculations with the RESEOS averaged atom model based on the Liberman model, and data from calculations with the quantum molecular dynamics (QMD) method in the intermediate region of densities and temperatures, where ion-ion interactions contribute considerably.