

Abstract Submitted
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Equation of state and Electrical resistivity of hot expanded Al-Au mixture JEAN CLEROUIN, VANINA RECOULES, STEPHANE MAZEVET, PATRICK RENAUDIN, PIERRE NOIRET, CEA/DAM BP12 91680 Bruyeres Le Chatel cedex FRANCE — The equation of state and the electrical resistivity of hot expanded Al-Au mixture are obtained in the internal energy range 5-50 MJ/kg. The experimental data were measured using a homogeneous and thermally equilibrated media produced inside an isochoric plasma closed-vessel, allowing an unequivocal test of the validity of the equation of state and transport coefficients modelling in warm dense matter regime. Experimental results were compared with quantum molecular dynamics simulations. The theoretical results match well the experimental data allowing a detailed interpretation of the theoretical thermodynamic properties and frequency-dependant conductivities, depending on the relative proportion of the mixture.

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