

Reconsideration of NaCl Equation of State

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We have re-analyzed the ultra-sonic data of NaCl taken at high pressure and high temperature by Spetzler et al.(1972). In this analysis, we use the measured C_p value instead of model calculated one. Thermal expansion, volume, adiabatic and Isothermal bulk moduli (K_s and K_t), Isobaric and Isochoric heat capacities and Gruneisen parameter (Γ) have been calculated up to 800 K and 0.8 GPa.

Spetzler and co-workers concluded that Γ is a function of volume only, however our results hard to accept this conclusion. Instead, we have confirmed the hypothesis; K_t is a function of volume only, by Birch(1986). If this hypothesis is true in a manner of NaCl, thermal pressure is a function of temperature only.

References

Birch, F.(1986) J. Geophys. Res., 91, 4949-4954.

Spetzler, H., Sammis, C.G., O'Connell, R.J.(1972) J. Phys. Chem. Solids, 33, 1727-1750.