

A B S T R A C T

Closed form analytical expressions for some equilibrium properties (viz. free energy, virial compressibility factor, static structure factor, compressibility equation of state, its related thermodynamic functions, surface tension and some steady state transport coefficients) of simple liquids have been derived using the well known Weeks, Chandler and Andersen perturbation theory. The chief advantage of the present derivations is that the numerical evaluation of the liquid state properties now reduces simply to a desk calculator task.