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Effect of Pressure and Thermal Expansion on Diverse Substance Properties

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Abstract: *The relationship between pressure, thermal expansion, and certain properties of substances can be elucidated through a derived equation that incorporates variables T, α, β, and γ, utilizing the Maxwell Thermodynamic relation which is a fundamental principle in thermodynamics. These variables play a crucial role in understanding the behaviour of substances under different conditions. This equation allows us to quantitatively analyse and predict the behaviour of substances under different temperature and pressure conditions, providing valuable insights into their physical properties and behaviour.*

Keywords: Thermal expansion, Equation of state, Thermodynamic properties, Maxwell relations, statistical mechanics

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