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## Thermo-acoustical properties of carbamide and N, N-dimethylformamide binary mixture at different temperatures

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### Abstract

Density, viscosity and ultrasonic velocity of binary mixture of carbamide with N, N-dimethylformamide have been measured at temperatures of 10 °C, 20 °C, 30 °C and 40 °C and at atmospheric pressure. From these experimental measurements the thermo-acoustical parameters such as acoustic impedance (Z), adiabatic compressibility ( $\beta$ ), relaxation time ( $\tau$ ), intermolecular free length ( $L_f$ ) and Gibb's free energy of activation (DG) have been calculated. The variations in these parameters have been correlated to derive the intermolecular interactions taking place between the species of present binary mixture.

### Keyword(s)

Carbamide; DMF; Viscosity; Ultrasonic velocity; Thermo-acoustical; Compressibility; Molecular free length

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