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Gaussian Approach to Analyze Glass Transition Peak of a Silver Doped SeIn Glassy Alloy DIPTI SHARMA, WIT, JOHN MACDONALD, WPI, RAJENDRA SHUKLA, ASHOK KUMAR, HBTI Kanpur, India — This study explores the Gaussian approach to analyze glass transition peak appeared in silver doped SeIn amorphous glassy alloy. The alloy $\text{Se}_{90}\text{In}_8\text{Ag}_2$ was heated at different heating rates from 10 °C/min to 25 °C/min using calorimetric technique and observed an endothermic peak for the glass transition (T_g). The shape, size, position and behavior of the peak change as the heating rate changes. A detailed peak analysis is performed following Gaussian model for this transition to show the significance of the shape and size of the transition. The alloy absorbs more thermal energy when heating rate increases, and shows an increase in enthalpy, decrease in entropy and the presence of a positive Gibbs free energy. This indicates the glass transition is nonspontaneous transition and needs more thermal energy to go through the transition during heating. The SeInAg has short ranged ring chain molecular structure. As it is heated, this molecular arrangement gets flexible and goes to the rubbery state at T_g . The mobility of the molecular arrangement increases with temperature increase and T_g shifts towards higher temperature as heating rate increases following Gaussian behavior. **Keywords:** Chalcogenide glassy alloy, enthalpy, entropy, Gibbs free energy, Gaussian behavior, glass transition, heat energy, temperature, amorphous state, rubbery state.

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