

Physical properties of binary tellurite glass system

ABSTRACT

The binary glass system of $(\text{TeO}_2)_x (\text{B}_2\text{O}_3)_{1-x}$ with $x = 60$ to 80 mol% were synthesized by rapid quenching method. Longitudinal and shear ultrasonic velocity were measured at room temperature and at 5 MHz frequency. Elastic properties, Poisson's ratio and micro hardness have been calculated from the measured density and ultrasonic velocity at room temperature. The transition temperature was also measured. The experimental results indicate that the elastic moduli of the binary glass system increase with TeO_2 content as the glass system become more rigid due to the mix former effect.

Keyword: Binary glass system