STRUCTURE, VISCOSITY AND MIXING BETWEEN ALKALI AND ALKALINE-EARTH SILICATE MELTS.

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Introduction
The relationship between physical properties and structure of glass and melts in the system Na2O-CaO-SiO2 are of technical and scientific importance, in particular for understanding the mechanism of glass formation. The glass former, silica, is the most abundant constituent in the Earth’s crust. Glass material is technologically important since it represents nearly 80% of industrial glasses and in particular soda-lime silicate glasses are at the base of conventional window glasses (Bower, 1986). The chemistry of glasses depends upon the network former and modifier content of the glass. The former form the structure of the glass and the modifier is incorporated to change the properties of the glass. The silica network has Si-O single bonds and Si-O-Si angle is 109°. The modifier can exchange part or all of the Si-O-Si bond with the modifier making the network more flexible. The density of glasses is highly dependent on the number of network former and modifier bonds. As the modifier is incorporated to glass, the density increases. The modifier can also be used to change the properties of the glass such as viscosity, strength, and other physical properties.

Materials and experiments

Rheological properties
The results of viscosity measurements on supersaturated liquids are plotted in Figure 2. The viscosity was determined using a helipot furnace containing the sample in a crucible. The sample was heated to a temperature, allowed to equilibrate for 4 hours, and then the viscosity was determined using a capillary viscometer. The viscosity of the glass was calculated using the capillary viscometer and the results were compared with previous experiments. The viscosity of the glass was determined using a capillary viscometer and the results were compared with previous experiments. The viscosity of the glass was determined using a capillary viscometer and the results were compared with previous experiments.

Raman spectroscopy
The effect of CaO on the Raman spectra of Na-silicate glass is shown in Figure 3. The Na-silicate glasses were synthesized by melting mixtures of Na2O, CaO, and SiO2. The spectra were recorded between 10 and 3000 cm-1 using a Bruker 510 spectrometer. The spectra were corrected using the long range correlation function (LRCF) and the results were compared with previous experiments.

Discussion
Adam-Gibbs theory and configurational entropies. As previously shown (Naussel and Richet, 1995), it is necessary to use the Adam-Gibbs equation of state to adequately describe the viscosity measurements. The Adam-Gibbs equation of state can only be used to describe the viscosity of glassy materials. The viscosity of a glassy material is determined using the Adam-Gibbs equation of state. The viscosity of a glassy material is determined using the Adam-Gibbs equation of state. The viscosity of a glassy material is determined using the Adam-Gibbs equation of state. The viscosity of a glassy material is determined using the Adam-Gibbs equation of state.