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Study of Porcelain Vitreous Phase Viscosity to Obtain Curve Ceramic Coatings

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The porcelain materials are composed by crystalline particles immerse in a vitreous matrix. This study has aimed to calculate the porcelain's vitreous phase viscosity through the Vogel-Fucher-Tamman (VFT) equation to obtain eventually curved coating. We've formulated a standard mass, and over it we've added the proportions of 4, 8 and 15% of sodium feldspar, main former of the liquid phase, in order to verify its influence over the viscosity at the final vitreous phase. Concerning the standard mass, the addition of 4 and 8% has provoked a reduction of viscosity, while the addition of 15% resulted in a raise of viscosity. Because porcelain does not present a homogenous vitreous phase and crystalline particles, the VFT equation may have given us relative viscosity values. However, these values are coherent with glasses containing sodium, if one assumes that the crystalline phases have no influence over the system and that the vitreous phase has a homogenous composition.