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# Compositional effects on the rheology of glass particle suspensions

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## Abstract

Vitreous enamel slips are characterized by the mixture of two or more solid phases – usually composed by glass frits, clays and additives – in an aqueous solution. The aim of this study is to shed light on the ionic interaction between clay and glass particles, which are assumed to govern the rheological properties of the slip. Therefore a series of aqueous suspensions using glasses of the composition  $x\text{Na}_2\text{O} \ y\text{CaO} \ (100-x-y)\text{SiO}_2$  with  $x = 0-26$  and  $y = 0-10$  are prepared. Oscillating rheometry at ambient temperature is used to investigate the viscoelastic behaviour of the slips. In particular, amplitude and frequency sweeps are performed to determine the time-dependent storage-to-loss modulus ratio from which the stability of the suspension is derived.

**Keywords:** rheology, suspension, enamel, slip, viscoelasticity, glass particles

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