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## Exploration of the Aventurine Effect Mechanism in Chromium Aventurine Glass

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### **Exploration of the Aventurine Effect Mechanism in Chromium Aventurine Glass**

Similar to the details of the discovery of aventurine glass, the mechanism that allow aventurine glass formation are not well understood. Mechanisms ranging from supersaturation with transition metal ions to the physical addition of iron or brass filings have been suggested. Because the amount of technical knowledge is extremely limited, the goal of this research is to better understand the melt conditions and formation mechanisms that produce aventurine glasses.

A composition, based on an artesian aventurine glass, was modified so that the effect of each batch material could be understood with regard to the aventurine effect. The specimens were analyzed using XRD, ASEM, DTA, and optical microscopy for comparison. The base glass was then modified as to vary the transition metal, transition metal ion concentration, and glass basicity. The specimens were analyzed similarly so that a better understanding of the conditions and mechanisms that lead to the formation of aventurine glass could be understood.

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*Lara Hrenak is a freshman attending the University of Missouri – Rolla, majoring in ceramic engineering. On campus she is actively involved in Keramos and Omega Sigma. She works on campus doing undergraduate research under the guidance of graduate student Nate Wyckoff.*