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[Image PDF (814K)] [References]

Experimental Binder-free Investments Reused to Cast Dental Precious Alloys

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Abstract:
This study aimed to develop reusable dental investments. SiO_2 and MgO were selected as refractory materials to prepare three types of investment (coded as 60S-40M, 80S-20M, 100S) with 40, 20, and 0 wt% of MgO. Each type of investment was reused twice. Thermal expansion and compressive strength were examined and statistically evaluated by ANOVA. To evaluate fit of castings, full crowns were cast by using a commercial Au-Ag-Pd alloy with all investment types. Marginal fit was statistically analyzed by cement thickness. It was found that although MgO strengthened the mold, it had little influence on expansion. The strength of 60S-40M was the highest, and 100S had the greatest advantage with regard to thermal expansion. In the evaluation for clinical applicability, all investments were able to cast successfully, but their castings might be undersized. Among the experimental binder-free investments reused for dental casting in this study, 100S in particular showed to be a good candidate for repeated fabrication of precision fit castings.

Key words:
Investment, Cast, Reuse

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