

Heraeus Dental Science

Scientific Information

Venus Diamond Flow

After the polymerisation of dental composites always a certain percentage of unbound crosslinkers are left in the material. These residual monomers cause a decrease of the mechanical material properties and could lead to sensitisations.

Due to the usage of high reactive crosslinkers Venus Diamond Flow shows an exceptional high degree of cure minimising this effect.

Degree of Cure

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Objective

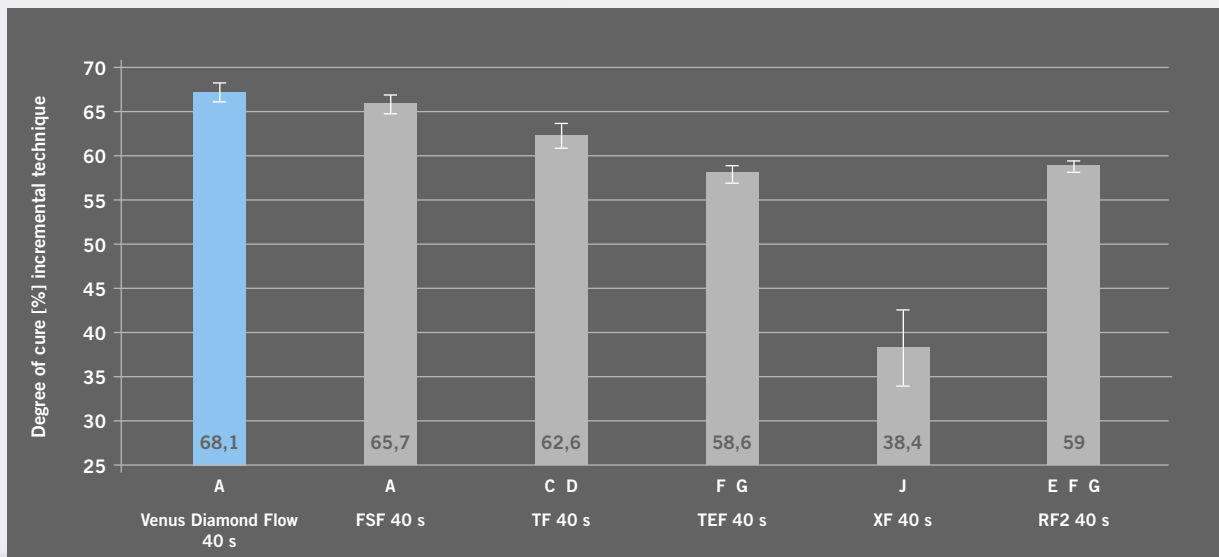
Purpose of the research project was to measure the degree of cure of different flowable composites: Venus Diamond Flow (Heraeus), X-Flow* (XF, Dentsply), Filtek Supreme XT/Plus Flow (FSF, 3M ESPE), Tetric EvoFlow (TEF, Ivoclar Vivadent), Revolution Formula 2 (RF2, Kerr).

*Similar to Esthet-X Flow (USA).

Materials & Method

Composite was filled into molds with a height of 6 mm. The molds were either bulk or in 2 mm increments filled. Thereafter specimens were light cured for 20 or 40 s. Degree of cure was determined with FTIR-Spectrometer.

Results



Letters indicate statistical significance. No significant differences between specimens with the same letters were found.

Venus Diamond Flow exhibited at each tested curing time the highest level of degree of cure in comparison with the other tested flowable composites: After 40 s Venus Diamond showed a degree of cure of 68.9% (± 1.3) for the incremental and 59.4% (± 2.1) for the bulk filling technique.

Conclusion

Venus Diamond Flow showed the highest degree of cure amongst the tested flowable composites which is the reason for its excellent mechanical properties.

Source

Ilie N: Bis-GMA free flowable nano-hybrid composite (2009). Data on file.