

## Some Important Properties of Composites

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The four properties presented in the table are useful to the clinician in determining how a composite will potentially perform when placed in a patient's tooth. Following is a brief description of these properties, the tests that are used to determine them and why they are clinically relevant:

**Flexural Strength and Flexural Modulus** describe a material's resistance to bending. The flexural modulus (stiffness) of an elastic material is the amount it will deflect elastically for a given applied load. Composite restorative materials must have acceptable flexural strength and stiffness to support the significant loads associated with eating hard foods (e.g., nuts and hard candy) without fracturing or permanently deforming.

**Radiopacity** is a measure of a material's ability to attenuate x-rays passing through it. It is often presented as the equivalent to "millimeters of aluminum" because aluminum has an x-ray attenuation which is similar to tooth tissue and can be easily machined into a test standard.

**Gloss** is a surface property related to specular reflection from the surface and is dependent on the material, its surface roughness, and the angle of illumination. Gloss is measured by a gloss meter and can be used to compare surface finishing and polishing performance of composites.

Composite Product (shade: A2)	Flexural Strength, MPa (SD)	Flexural Modulus, GPa (SD)	Radiopacity, mm of aluminum per mm of material	Gloss, gloss units
<b>Universal Composites</b>				
Beautiful II (Shofu Dental Corp.)	124 (9)	11.8 (0.7)	3.1 (0.1)	58
Camouflage Universal (Glidewell Dental Laboratories)	122 (10)	10.0 (0.8)	2.6 (0.0)	72
Venus Diamond (Heraeus Kulzer)	161 (15)	12.4 (1.1)	3.6 (0.0)	59
Venus Pearl (Heraeus Kulzer)	152 (11)	9.6 (0.8)	3.2 (0.0)	67
Reflectys (Itena North America)	137 (3)	10.6 (0.5)	2.7 (0.0)	67
<b>Flowable Composites</b>				
Beautiful-Bulk Flowable (Shofu Dental Corp.)*	120 (4)	10.1 (0.9)	2.7 (0.1)	na
Beautiful Flow Plus (Shofu Dental Corp.)	105 (7)	7.9 (0.5)	2.3 (0.1)	74
Camouflage Flowable (Glidewell Dental Laboratories)	126 (6)	5.3 (0.1)	1.8 (0.0)	71
Clearfill Majesty ES Flow (Kuraray America)	139 (8)	6.7 (0.7)	2.2 (0.0)	76

\* Compressive strength = 293 (16) MPa

### Venus Diamond®

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Heraeus Kulzer  
(800) 431-1785  
www.heraeusdentalusa.com



**Product Description:** *Venus Diamond* is a universal nano-hybrid composite with optimal physical properties that truly performs in every category with low shrinkage stress, unique handling, exceptional strength and durability, and perfect color adaptation. Offering a firmer, more packable consistency, *Venus Diamond* leads the industry in color adaptability with a patented formula that provides an outstanding natural look – replicating nature and mimicking tooth anatomy. Just one shade saves time and produces radiant results.

### Reflectys

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Itena North America  
(877) 224-6608  
www.itena-clinical.com



**Product Description:** *Reflectys* is a light-cured, radiopaque, nano-hybrid composite indicated for all restorations of anterior and posterior teeth. *Reflectys* has exceptional esthetic quality, excellent marginal adaption and easy handling. *Reflectys* is available in 16 shades. Cure time is 20 seconds at a depth up to 3 mm. *Reflectys* was evaluated by 24 consultants in 740 uses. This universal composite received a 91% clinical rating. *Reflectys* is available through Henry Schein or DC Dental - Syringe \$54.99, 20/Pk Capules \$69.99 and Flowable \$36.99.