G-ænial Universal Flo

A TOUCH OF GENIUS

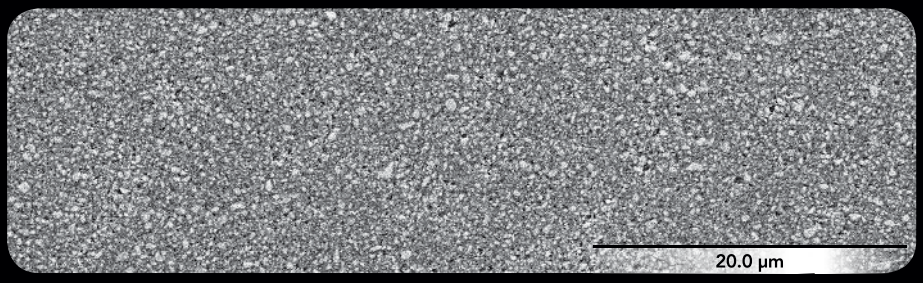
Introducing G-ænial Universal Flo

The world's first truly universal Injectable Composite.

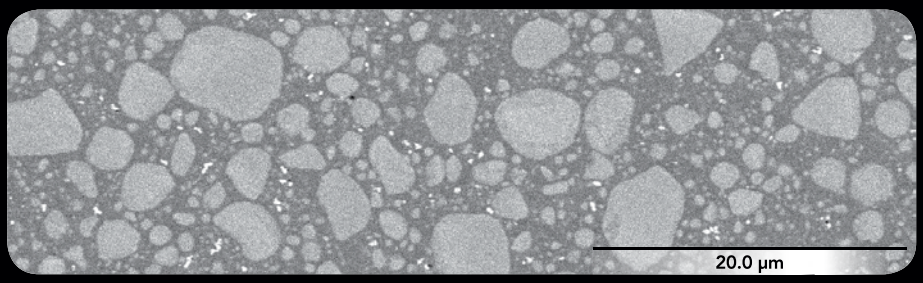
A touch of genius.

True innovation in filler size and composition, in filler silanation and in manufacturing techniques has given rise to a remarkable composite resin. G-ænial Universal Flo is the first truly universal Injectable Composite, a material that clinicians can place with ease for beautifully adapted, beautifully finished, fast, aesthetic and tough composite restorations.

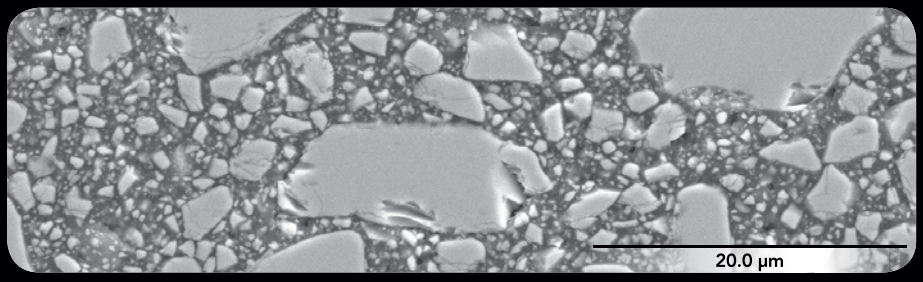
G-ænial Universal Flo, the new technology for Injectable Composite resin.



G-ænial Universal Flo. Features 200-nm strontium glass fillers homogenously dispersed for high flexural strength and wear resistance



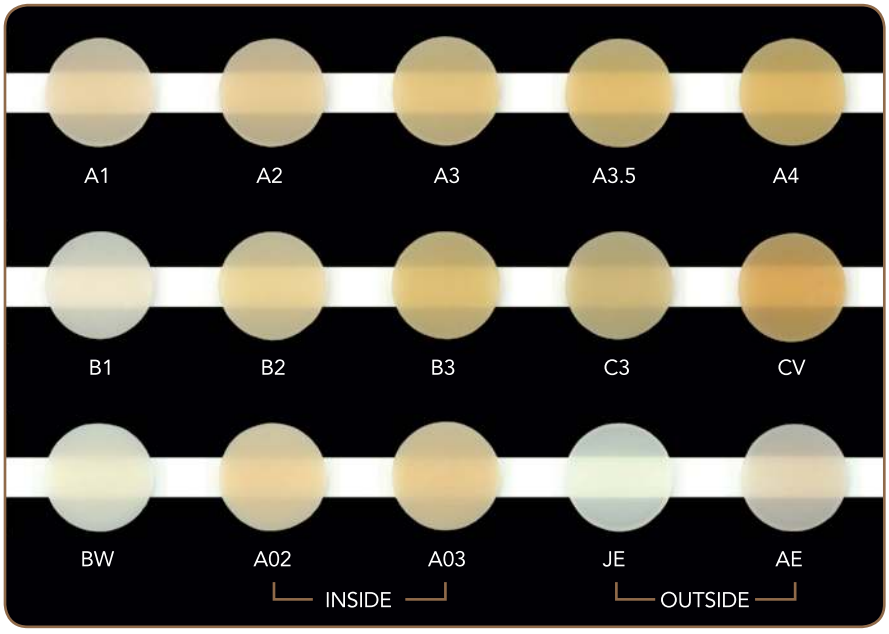
Nano composite. Typically contains spherical nano clusters made up of agglomerated nano fillers of varying sizes



Micro Hybrid. Typically contains a range of glass and nano fillers of varying sizes

Superb, no compromise aesthetics

Thanks to its broad range of 15 shades, based on the Vita* shade guide, and 3 different levels of translucency, highly aesthetic restorations can be achieved using a single shade, or with a multi-shade layering technique.



Inside special shades AO2 and AO3

These opaque shades will block shine-through and mask dentine discolouration, while adding "warmth" to the final restoration.

Outside special shades, JE and AE, for replacing enamel

Enamel changes over time, decreasing in value from high (whiter) to low (darker) and becoming thinner and more translucent. JE (Junior Enamel) and AE (Adult Enamel) are outside shades that will help clinicians create restorations with age appropriate value. JE and AE shades have exactly the same composition and physical properties as the other shades of G-ænial Universal Flo.

*Vita is a trademark of VITA Zahnfabrik, Bad Säckingen, Germany

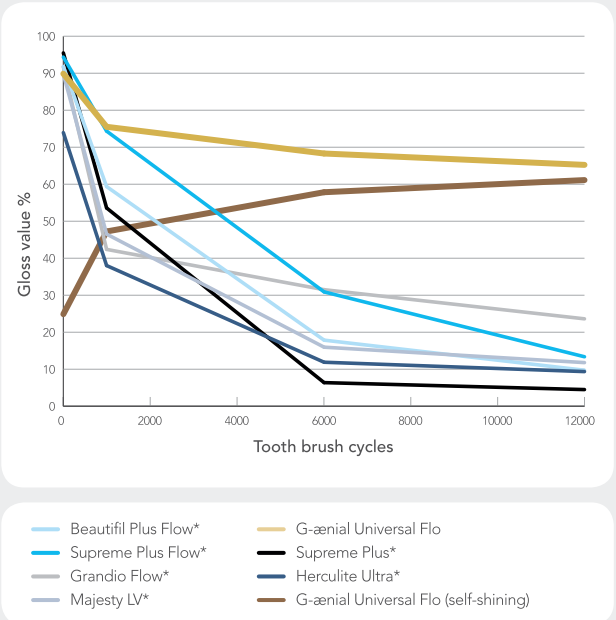
Superior polish and high gloss retention – just like a microfill

G-ænial Universal Flo gives you and your patients the highest level of aesthetic outcome with a beautiful high gloss finish and excellent gloss retention. You will be amazed that a full strength composite can so quickly and easily deliver a high gloss finish. And your patients will appreciate the self-polishing characteristics, where the high gloss finish is maintained with daily tooth brushing.

Restored using shades A03, A4, A3 and AE.

Dr S Koide, Nagano, Japan

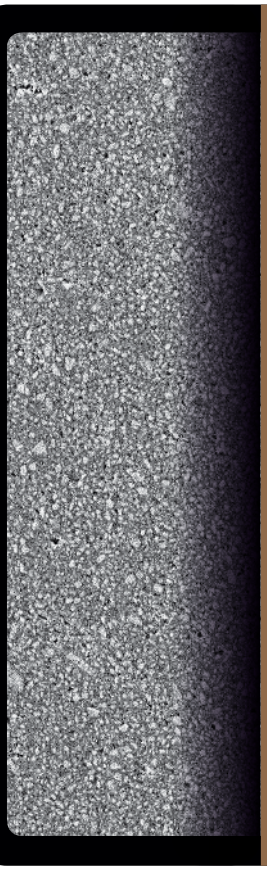
POLISH RETENTION



* Not a trademark of GC Corporation

Strength through filler innovation

A truly universal Injectable Composite that is strong, polishable and wear resistant could only be achieved through the development of new filler technologies.



A new formulation of strontium glass was developed, which is highly translucent, acid resistant and radiopaque. This new glass formulation is milled down to an incredibly fine 200-nanometre particle size, half the size of previous generations of glass fillers used in micro hybrid composites.

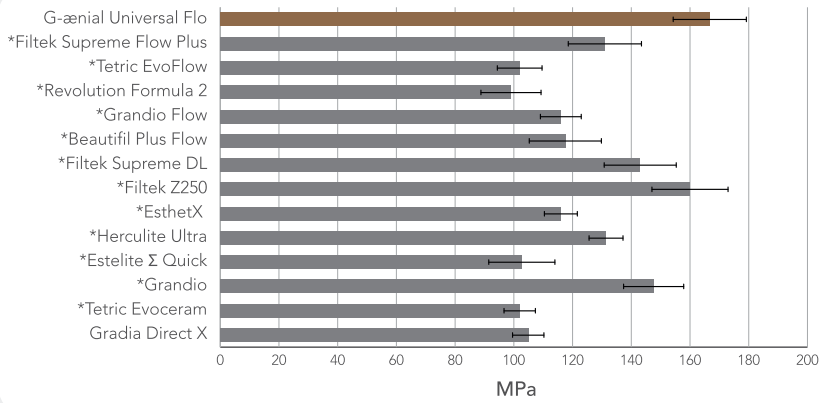
A revolutionary new silane treatment method is used on the surface of the nano-sized glass, in order to strengthen the adhesion between glass particle and resin matrix, and improve the hydrolytic stability and durability of the composite structure.

Silanation technology was a key aspect of the new material development.

Dr douglas A Terry, Houston TX

Dr M Okaguchi, Tokyo, Japan

FLEXURAL STRENGTH



R&D Dept. GC Corporation

An Injectable Composite with impressive strength

The flexural strength of G-ænial Universal Flo is unmatched by most conventional hybrid composites, giving confidence for its universal applications.

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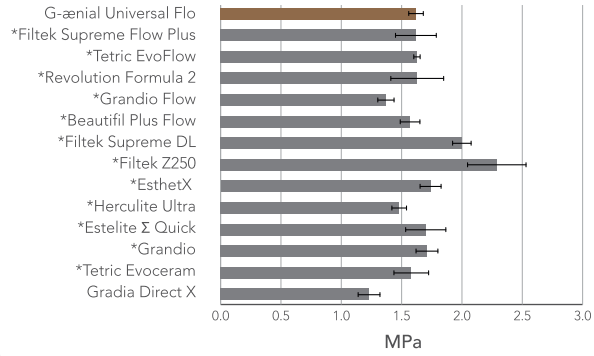
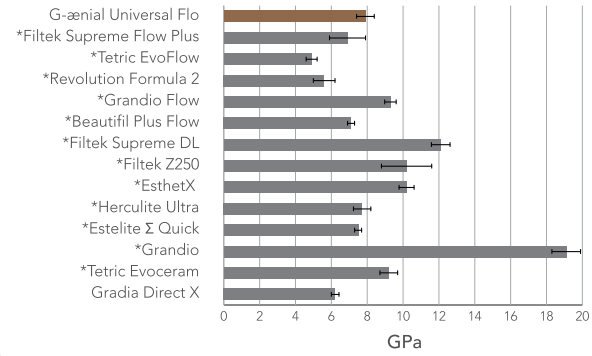
FRACTURE TOUGHNESS



R&D Dept. GC Corporation

FLEXURAL MODULUS



R&D Dept. GC Corporation

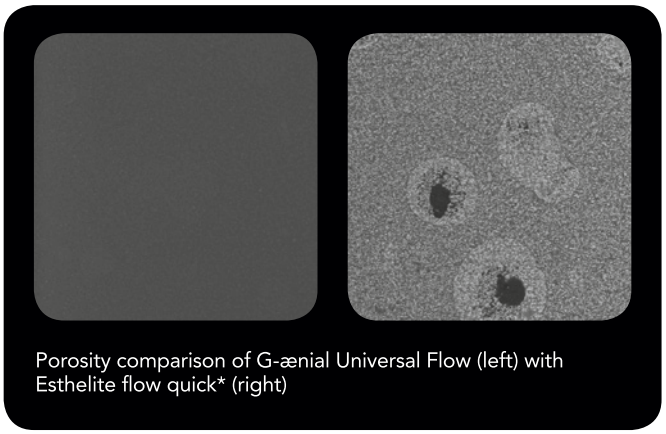
Wear resistance and manufacturing innovation

An Injectable Composite that is highly wear resistant.

GC's ongoing commitment to research in highly wear resistant coatings has driven the innovation behind the new level of wear resistance that can be achieved with lower viscosity resin materials.

The high filler loading (69% wt) and homogenous dispersion of filler required for a high strength Universal Composite was achieved through the introduction of new manufacturing processes.

A new de-foaming process delivers porosity-free composite, as shown in the comparison below, that further improves strength and enhances the final polish and aesthetics.



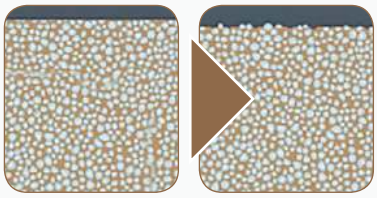
Porosity comparison of G-ænial Universal Flow (left) with Esthelite flow quick* (right)

* Not a trademark of GC Corporation

Dr M Okaguchi, Tokyo, Japan

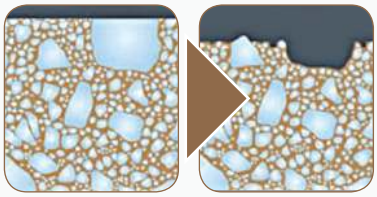
Dr G Milicich, New Zealand

Confocal laser microscope images of comparative toothbrush wear



After polishing After wear

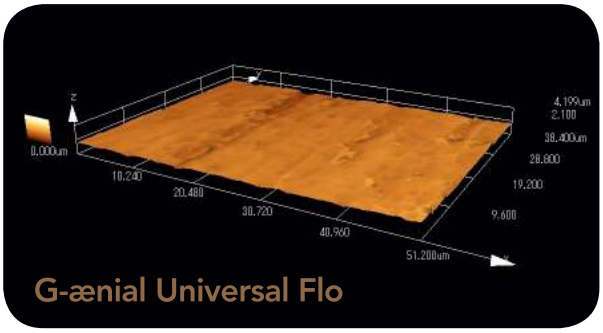
Individually dispersed nano sized fillers used in **G-ænial Universal Flo** provide greater wear resistance.

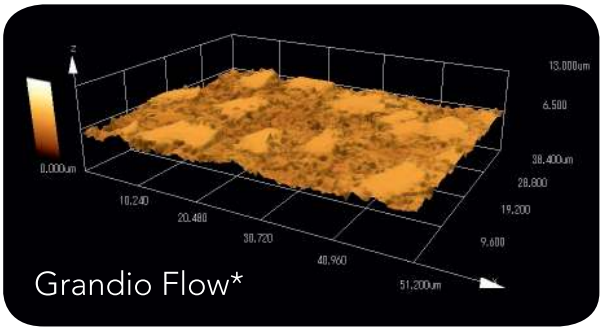


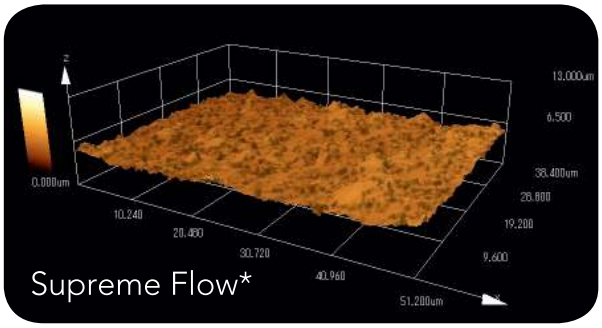
After polishing After wear

Macro fillers (e.g. Grandio Flow*) and clumped nano filler composites (e.g. Supreme Flow*) exhibit higher wear.

Uniform dispersion of individually silanated particles is the key and a clear point of superiority over alternative universal composites, including clumped nanofiller technologies, where fillers are more readily plucked and subjected to hydrolytic degradation as a result of filler size and compromises in silanation processes. Truly universal composite resins can achieve both polish retention and wear resistance.



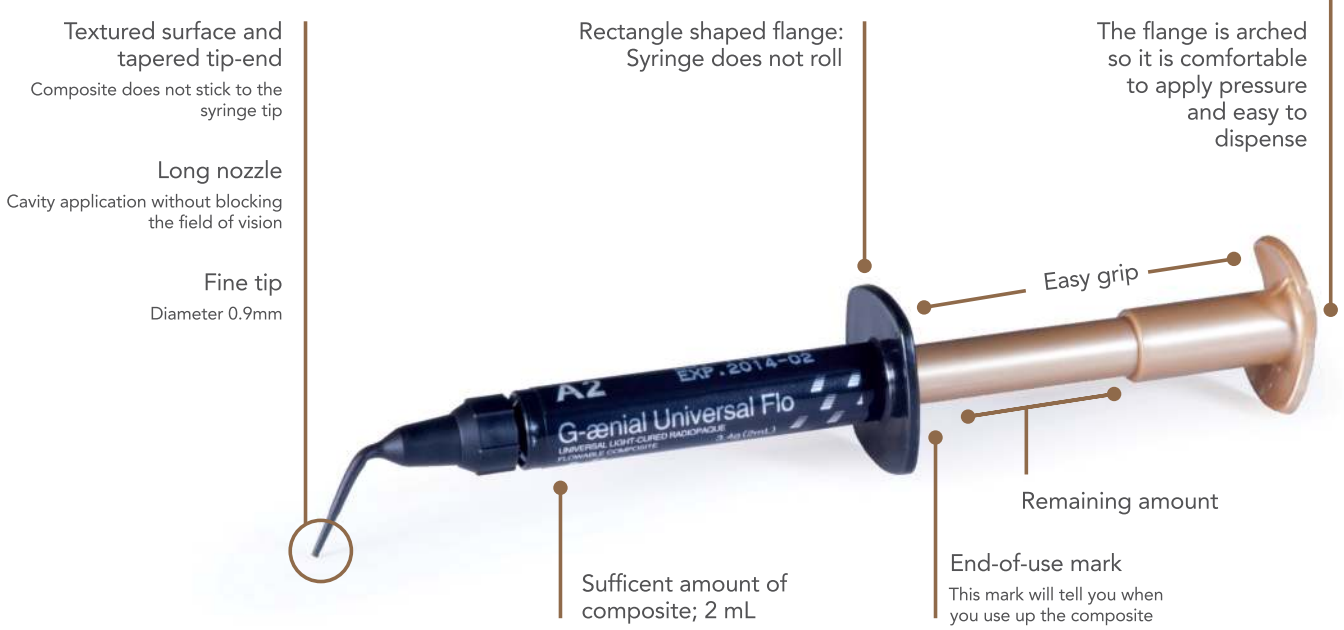




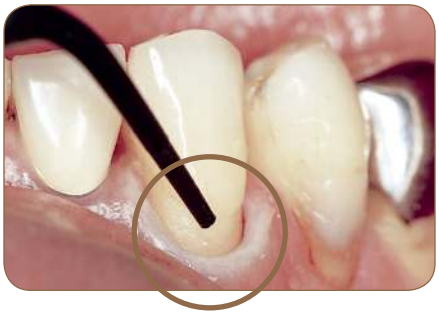
* Not a trademark of GC Corporation

Economical and **ergonomic** dispensing

G-ænial Universal Flo is delivered in a purpose-made syringe, that has drawn on the convenience of flowable composite syringe design, and has then been enhanced to create a more economic and ergonomic Injectable Composite design.



Controlled fluidity



Dr M Miyazaki, Tokyo, Japan

G-ænial Universal Flo offers a fast placement technique for all cavity designs with quick finishing and a beautiful aesthetic end result!

Injects like a flowable, yet will stack like a traditional composite.

Using an injection technique with G-ænial Universal Flo has several advantages.

Optimum cavity adaptation can be realised with no risk of pull back that might cause voids at critical margins.

Composite placement is exact and controlled, making the build up of anatomical form easy to achieve.

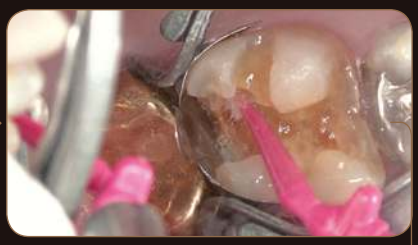
Controlled fluidity ensures placement is quick and stress-free. The combination of smooth flow and thixotropic properties means G-ænial Universal Flo wets surfaces easily, but is not runny and stays neatly in place.

Clinical observations

Case 1

A metal inlay has dislodged

Cavity preparation



V-ring positioned, G-BOND applied

Dentine surfaces restored with shade AO3

Instruments can be utilised to assist in placement

The distal wall is restored with shades A4 and C3

V-ring positioned for mesial wall

Finished restoration

9 month review

Dr S Koide, Nagano, Japan

Case 2

Patient request for tooth coloured restoration

Removal of metal inlay

Apply G-BOND

Buccal cusp is formed with shade A2

Incremental placement completed

Finished restoration

Dr M Miyazaki, Tokyo, Japan

Case 3

Amalgam restoration requires replacement

Incremental placement, shades A4 and A3

Finished restoration

Dr S Koide, Nagano, Japan

Question and Answers

Q What is the recommended curing depth for composite increments of G-ænial Universal Flo assuming a 20-second light cure?

A 2 mm.

Q Do you need a special bonding agent for G-ænial Universal Flo?

A No, G-ænial Universal Flo can be used with GC G-BOND, GC Fuji BOND LC or any other UDMA- or BisGMA-based dentine and enamel bonding agent.

Q Is G-ænial Universal Flo compatible with other UDMA- or BisGMA-based composites?

A Yes.

Q How does the quantity of material in a syringe of G-ænial Universal Flo compare to other conventional and flowable composite syringes?

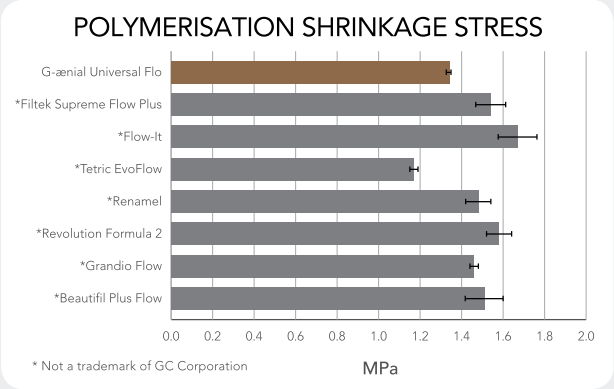
A G-ænial Universal Flo contains 2 mL of composite per syringe, which is twice the quantity found in a flowable syringe, and similar to the quantity of a conventional composite syringe.

Q What is the % volumetric polymerisation shrinkage of G-ænial Universal Flo?

A According to measurements undertaken at Nihon University (IADR 2011 abstract 605), volumetric shrinkage is 3.4%.

Q How does the level of shrinkage stress compare to other composite materials?

A Due to their lower modulus of elasticity, traditional flowable composite materials have tended to exhibit lower polymerisation shrinkage stress. G-ænial Universal Flo has a similar level of shrinkage stress.



Q Why do the intra oral tips screw on?

A The existing design of intra oral tips used for flowable composites had the potential to dislodge when used with a high density formulation of Injectable Composite. The new intra oral tip design is much more securely attached, with a joint strength 8 times higher than flowable composite syringe tips, removing any risk of dislodgement during placement.

Q Are there any technique tips suggested for placement of Injectable Composite?

A Filling from the base of the tooth and moving the material with the dispensing tip are recommended. When removing the tip from the composite after placement, the potential for 'stringing' is decreased if the tip is removed perpendicular to the surface of the material.

Q Why is G-ænial Universal Flo strong enough for use in all cavities while most other flowable composites do not make this claim?

A G-ænial Universal Flo exhibits excellent physical properties including outstanding flexural strength. Its strength surpasses many conventional composite materials and is due to the dense, heavily filled, porosity-free composition. This is why G-ænial Universal Flo is indicated for all cavity classifications.

Q What is the % filler by weight and volume?

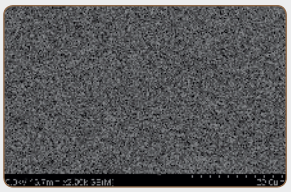
A G-ænial Universal Flo is 69% filled by weight, 50% filled by volume.

Q What is the level of radiopacity of G-ænial Universal Flo?

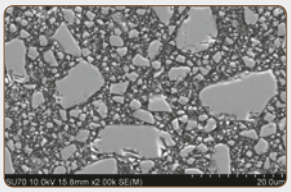
A 181% Al which is close to the level of radiopacity of enamel. For optimum diagnostic contrast a restoration should have a level of radiopacity equal to that of enamel.

Q Why is G-ænial Universal Flo able to sustain its polish over time better than a conventional micro-hybrid?

A G-ænial Universal Flo contains 200-nm diameter glass fillers, which are much finer than previously seen in hybrid composites. In addition, these individually silanated glass fillers are heavily filled and evenly dispersed throughout the resin matrix forming a highly dense, wear resistant composite structure. In comparison, conventional micro-hybrid composites typically contain a range of filler sizes including larger glass fillers up to several micrometres in size. As resin wears over time, these larger fillers become exposed, resulting in a rough surface with lower wear resistance and reduced polish retention, compared to G-ænial Universal Flo.



G-ænial Universal Flo



Majesty LV Hybrid*

* Not a trademark of GC Corporation

G-ænial Universal Flo

3.4gm (2.0mL) syringe, 10 dispensing tips

Dispensing Tip III refill 15pcs

Available in 15 shades:
A1, A2, A3, A3.5, A4, B1, B2, B3, C3
Inside (Opaque): A02, A03
Outside (Enamel): AE, JE
Bleaching: BW
Cervical: CV

G-BOND

Intro kit contains
1 x 5mL bottle of G-BOND
50 x micro tips
1 x micro-tip applicator
1 x dispensing dish

Unidose kit contains
50 x 0.1mL unit doses of G-BOND
50 x micro-brush applicators

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