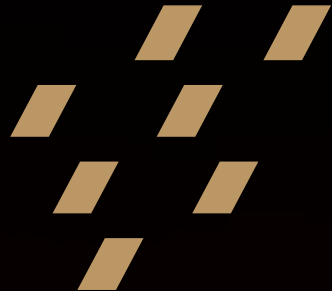


G-ænial™ Universal Flo  
*Universal Injectable Composite*

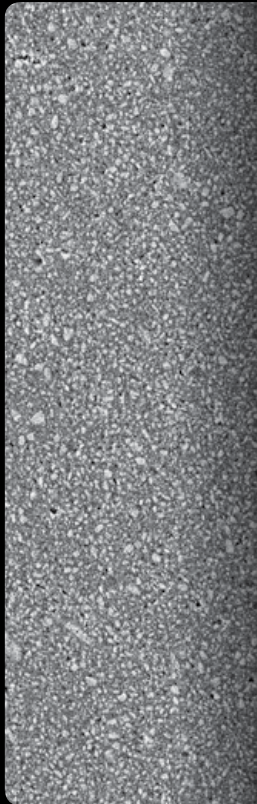


A TOUCH  
OF GENIUS

*./'GC./*

# 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-nanometer 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

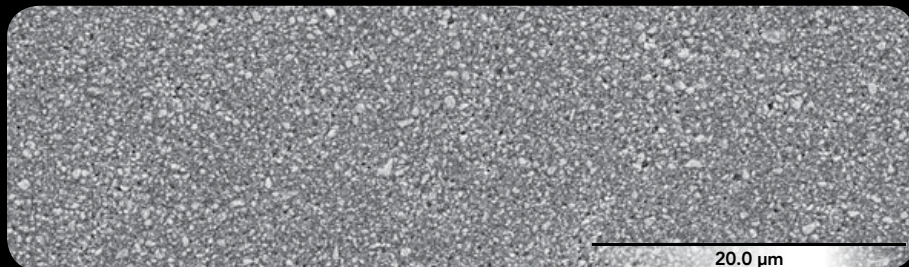


Dr. M. Okaguchi, Tokyo, Japan

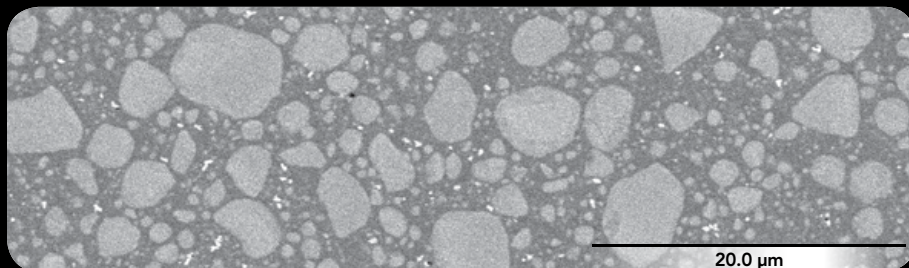
## A touch of genius.

True innovation in filler size and composition, in filler silanation and in manufacturing techniques, have 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.

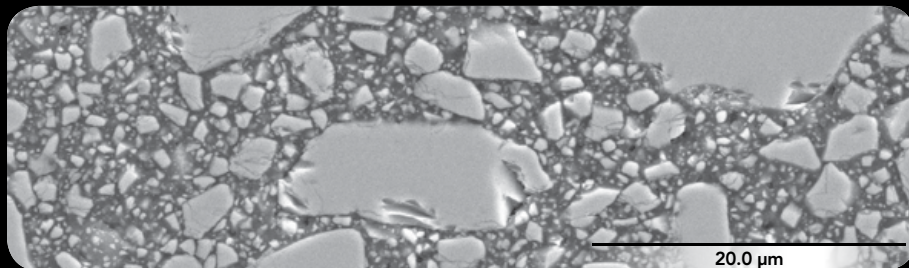
**G-ænial  
Universal Flo,**  
the new technology  
for Injectable  
Composite resin.



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



**Filtek Supreme Ultra Flow\*** (Nano composite). Typically contains spherical nano clusters made up of agglomerated nano fillers of varying sizes



**Majesty\*** (Micro Hybrid). Typically contains a range of glass and nano fillers of varying sizes

# The world's first truly universal Injectable Composite.

## Introducing G-ænial Universal Flo



Class I



Class II



Class III



Class IV



Class V

### Full Strength

Injectable Composite for  
all cavity classifications

### Beautiful Aesthetics

with a high gloss  
finish that lasts

### No Slumping

yet wets and adapts  
for fast application

### Sets Rock Hard

with exceptional  
wear resistance

### Self-Polishing

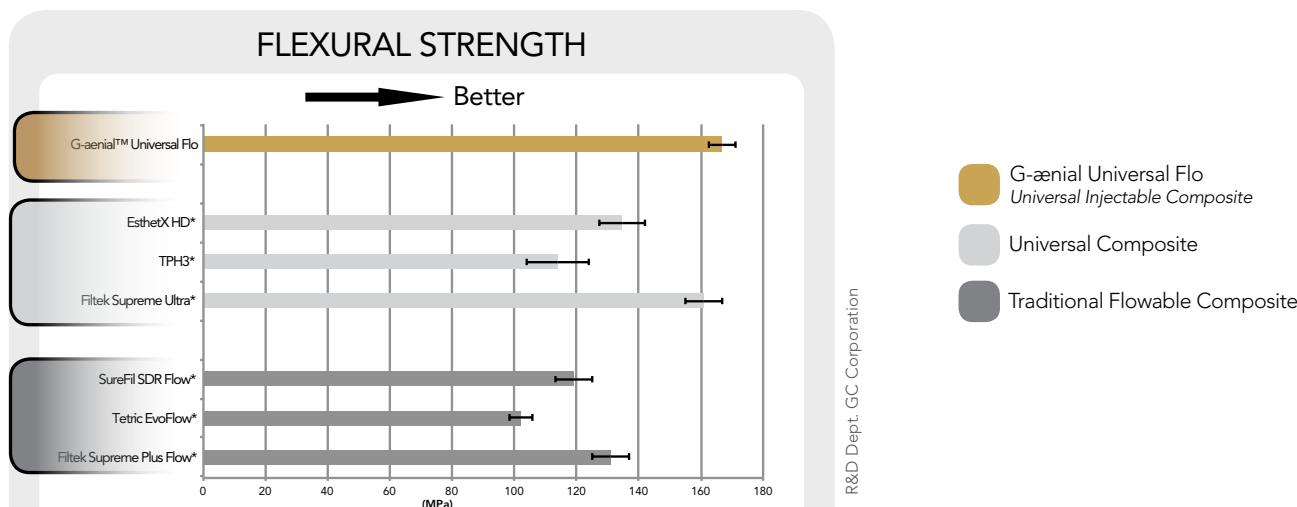
and fast finishing with  
ideal gloss retention

### Universal Composite

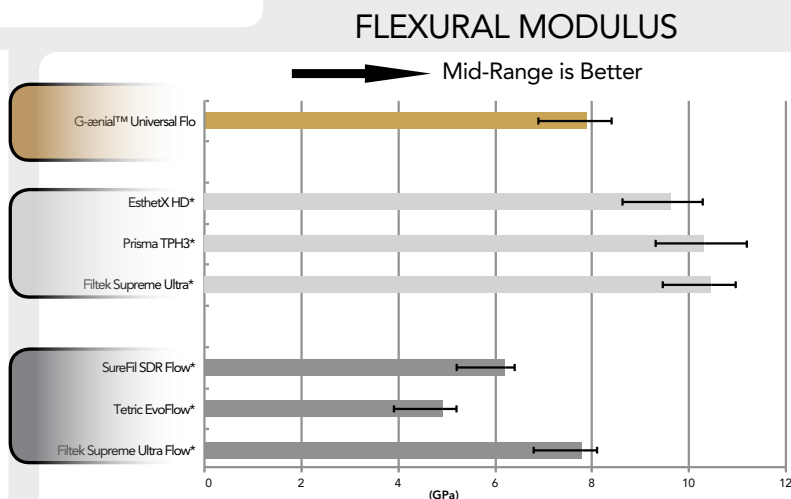
with the convenience of  
a flowable syringe



## 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.





# Wear resistance and manufacturing innovation

## An Injectable Composite that is highly wear resistant.

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.

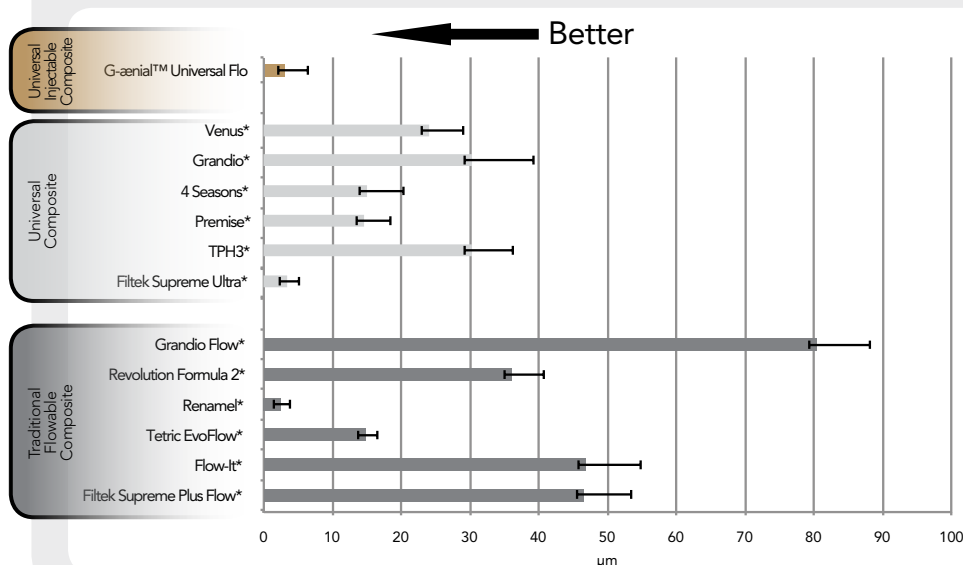
A new de-foaming process delivers porosity-free composite, as shown in the comparison below, that further improves strength and enhances the final polish and aesthetics.



Dr. M. Okaguchi, Tokyo, Japan

Dr. G. Millich, New Zealand

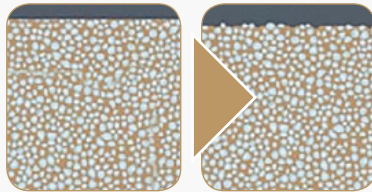
## THREE BODY WEAR



\* Not a trademark of GC Corporation

R&D Dept. GC Corporation

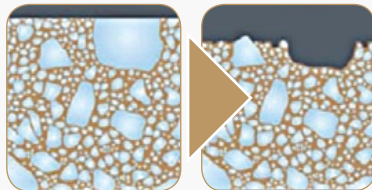
## Confocal laser microscope images of comparative toothbrush wear



After polishing

After wear

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

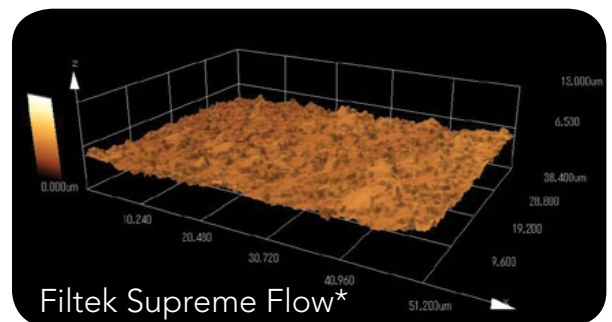
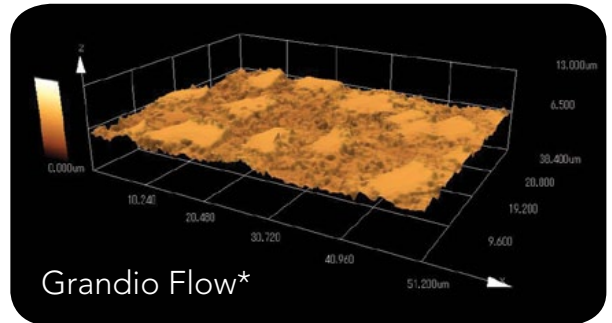
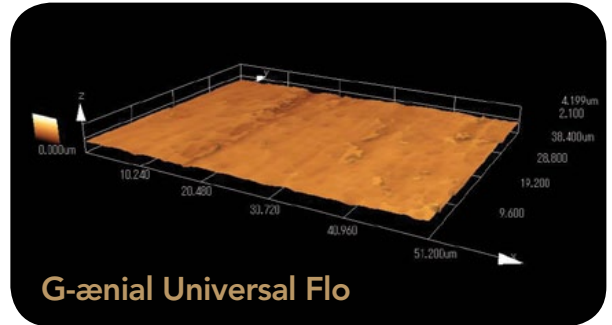


After polishing

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

# Superb, no compromise aesthetics

## Superior polish and high gloss retention – just like a microfill

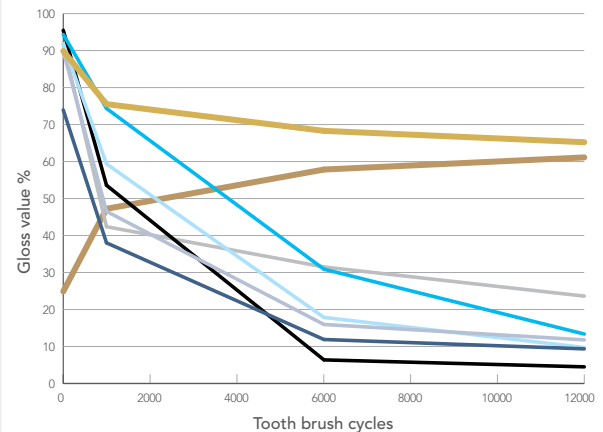
G-ænial Universal Flo gives you and your patients the highest level of aesthetic outcome with a beautiful high gloss finish and excellent gloss retention. You will be amazed that a full strength composite can so quickly and easily deliver a high gloss finish. And your patients will appreciate the self-polishing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

Restored using shades A03, A4, A3 and AE.



Dr. S. Kozide, Nagano, Japan

## POLISH RETENTION



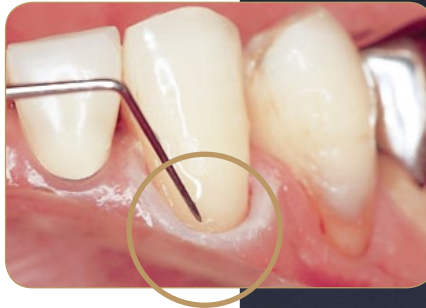
- Beautiful Plus Flow\*
- Supreme Plus Flow\*
- Grandio Flow\*
- Majesty LV\*
- G-ænial Universal Flo
- Supreme Plus\*
- Herculite Ultra\*
- G-ænial Universal Flo (self-shining)

\* Not a trademark of GC Corporation



# Controlled fluidity

Dr. M. Miyazaki, Tokyo, Japan



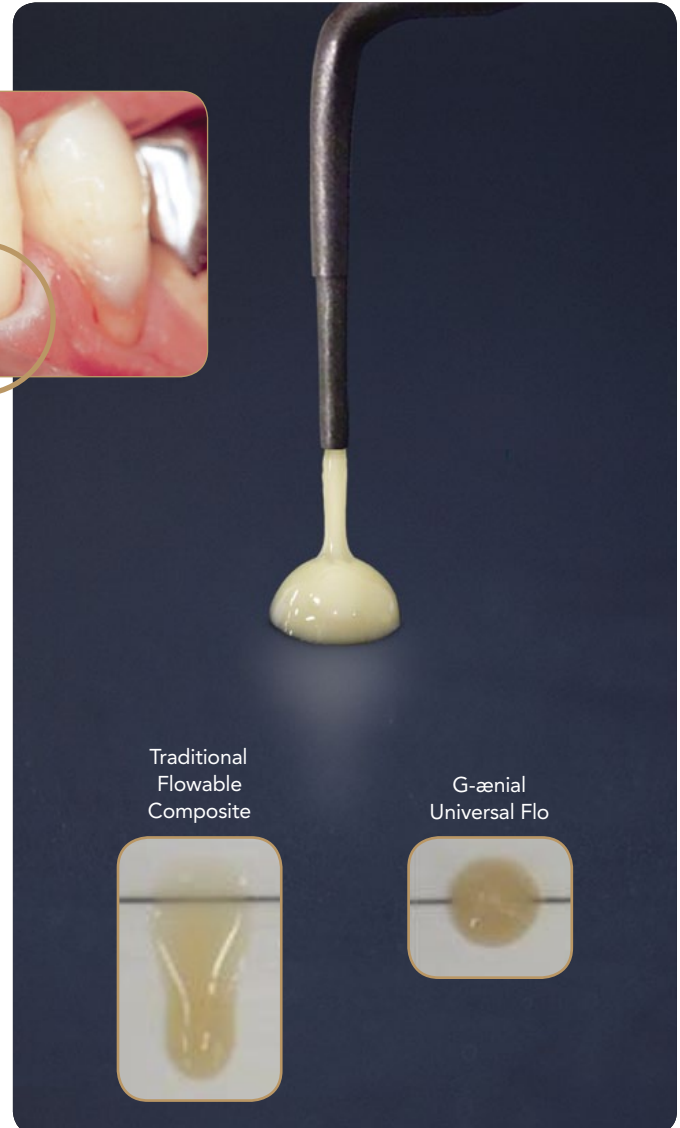
**Injects like a flowable, yet will stack like a traditional composite.**

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

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

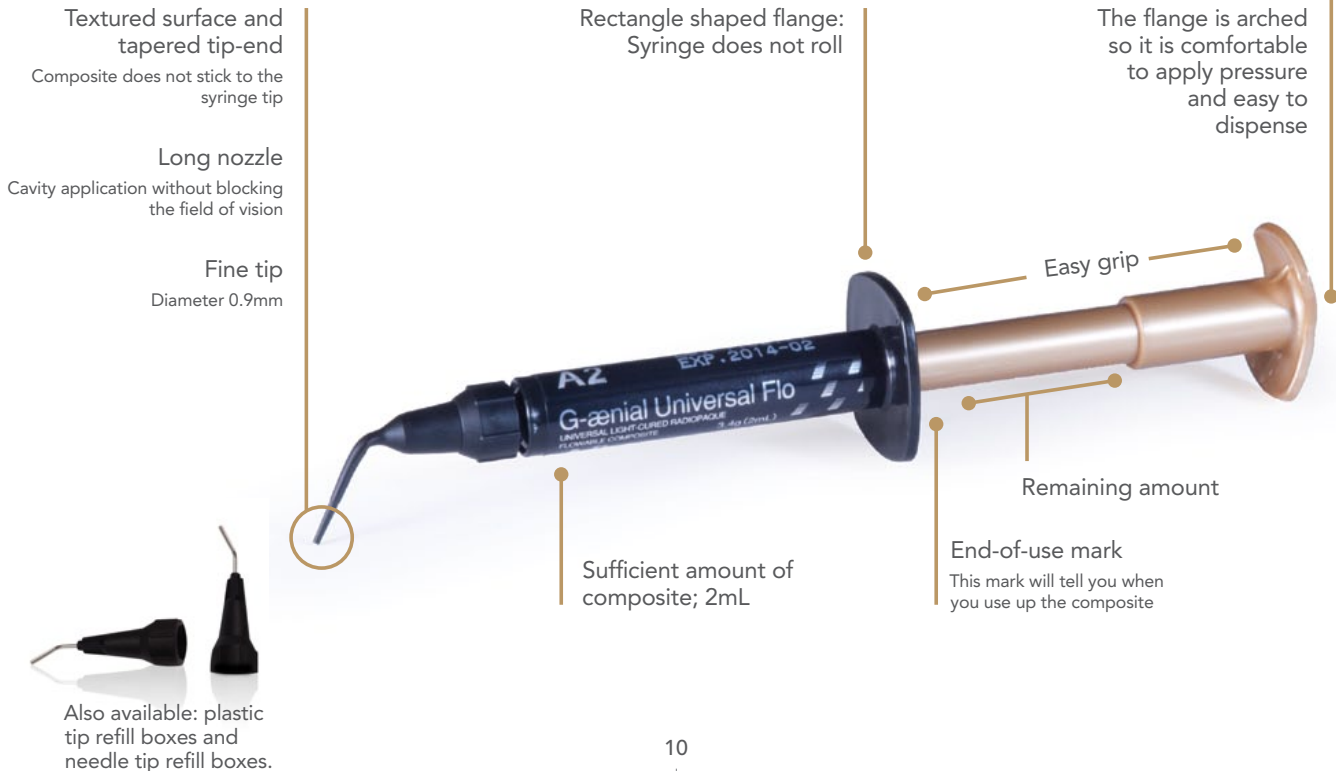
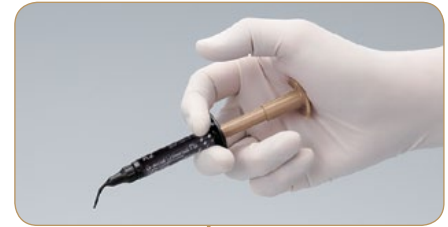
Composite placement is exact and controlled, making the build-up of anatomical form easy to achieve.

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.

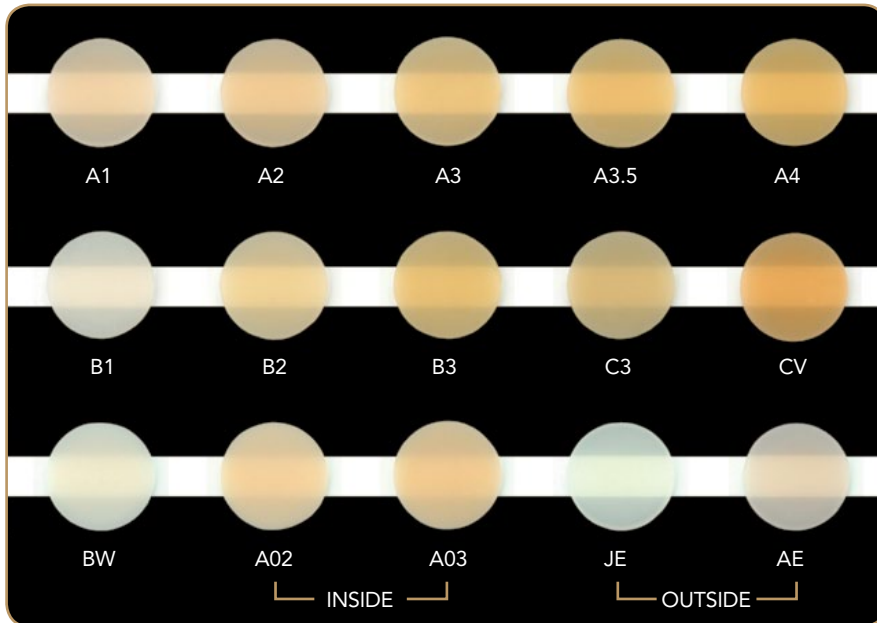


# Economical and ergonomic dispensing

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.



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 dentin discoloration, 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

# Clinical observations

## Case 1



A metal inlay has dislodged



Cavity preparation



V-ring positioned, apply G-aenial Bond.



Dentin surfaces restored with shade AO3



Instruments can be utilized to assist in placement



The distal wall is restored with shades A4 and C3



V-ring positioned for mesial wall



Finished restoration

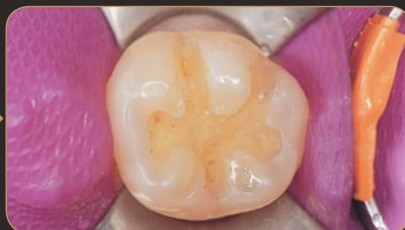


9 month review

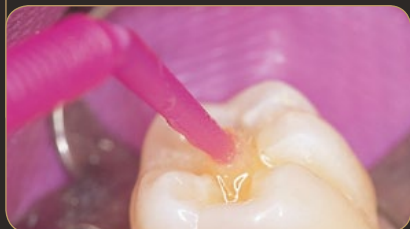
## Case 2



Patient request for tooth colored restoration



Removal of metal inlay



Apply G-ænial Bond.



Buccal cusp is formed with shade A2



Incremental placement completed



Finished restoration

## Case 3



Amalgam restoration requires replacement



Incremental placement, shades A4 and A3



Finished restoration



# 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. However, we recommend G-ænial Bond.

**Q** Is G-ænial Universal Flo compatible with other UDMA or bis-GMA 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?

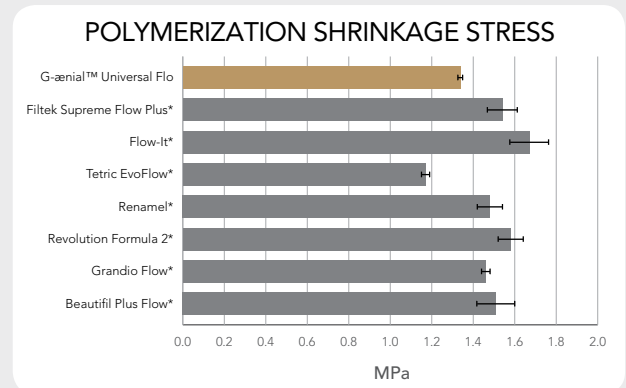
**A** G-ænial Universal Flo contains 2mL of composite per syringe, which is twice the quantity found in a flowable syringe, and similar to the quantity of a conventional composite syringe.

**Q** What is the percentage of volumetric polymerization 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 polymerization 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.

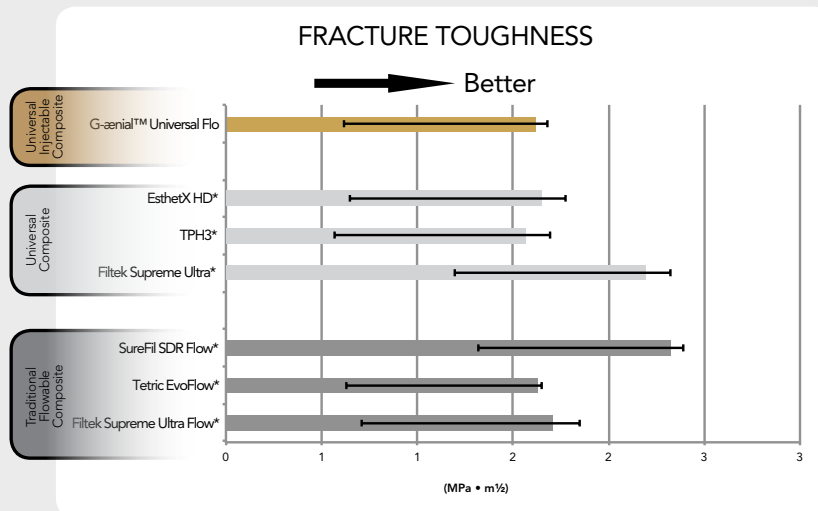
Its strength surpasses many conventional composite materials and is due to the dense, heavily filled, porosity-free composition. This is why G-ænial Universal Flo is indicated for all cavity classifications.

**Q** What is the percentage of 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.

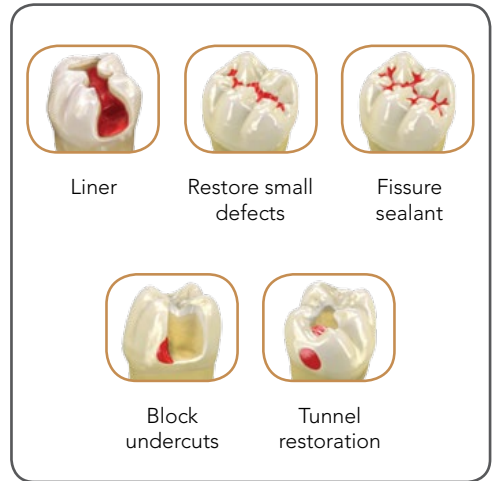


\* Not a trademark of GC Corporation

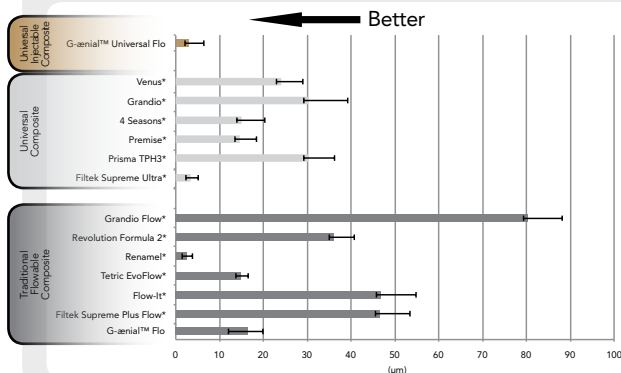
# G-ænial™ Flo traditional flowable

G-ænial Flo is a partner product to G-ænial Universal Flo. It is indicated for use in small restorations and as a cavity liner. This highly radiopaque and highly flowable composite enables easy placement and flow into preparations for excellent handling.

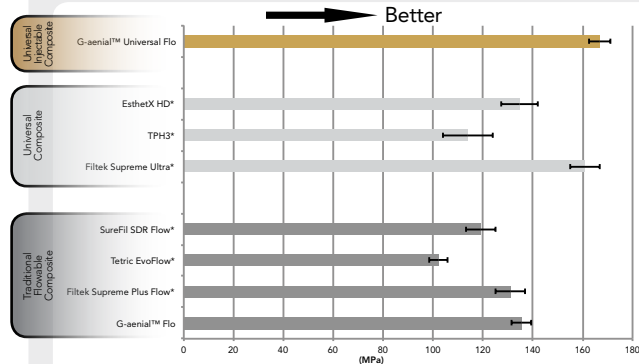
G-ænial Flo is also delivered using the same innovative syringe design. Its flexural strength and wear resistance are superior to all leading flowable composites.



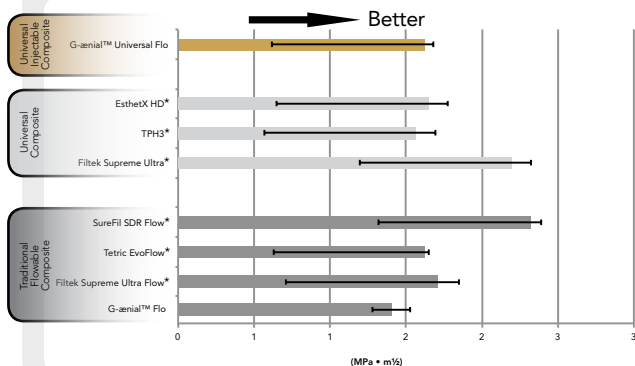
### THREE BODY WEAR



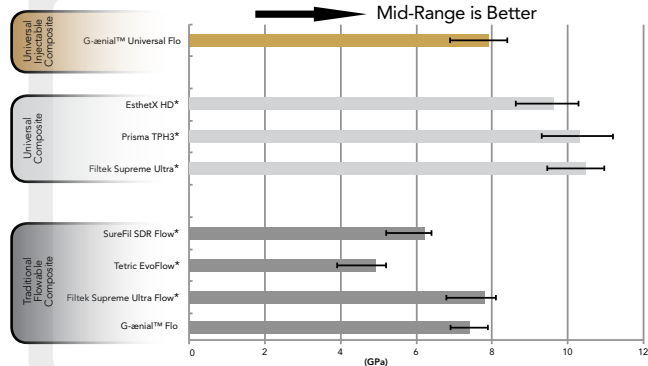
### FLEXURAL STRENGTH



### FRACTURE TOUGHNESS



### FLEXURAL MODULUS





## G-aenial Bond & Universal Flo Kit

**400222 Contains:**

**1 x G-aenial Bond Kit**

(1 x 5mL bottle, 50 x disposable applications, 20 x disposable dispensing dish)

**1 x G-aenial Universal Flo Shade A2 Refill**

(1 x 2mL/3.4 g syringe, 20 x dispensing tips)



**G-aenial Universal Flo (Universal Injectable Composite)**

**Refills - available in the following shades:**

A1, A2, A3, A3.5, A4, BW, B1, B2, B3, C3, CV, AO2, AO3, JE and AE.

**G-aenial Flo (Traditional Flowable)**

**Refills - available in the following shades:**

A1, A2, A3, A3.5, A4, CV, AO2 and AO3.

***For more information, please visit [www.gcamerica.com](http://www.gcamerica.com)***

**GC**

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