

G-ærial Universal Flo



A TOUCH  
OF GENIUS

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# Introducing **G-ænial Universal Flo**

The world's first truly universal Injectable Composite.



Class 1



Class 2



Class 3



Class 4



Class 5

## 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

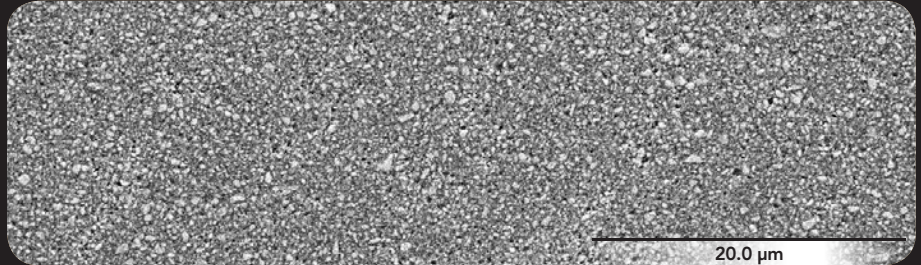
in the convenience of a flowable syringe



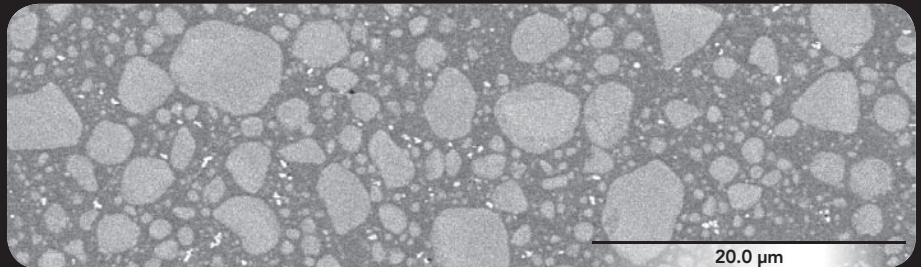
## A touch of genius.

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.

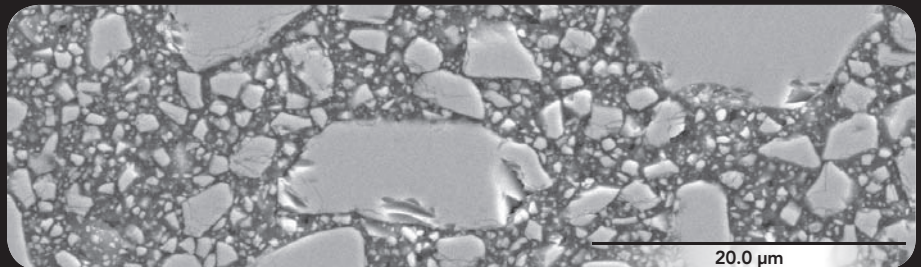
**G-ænial Universal Flo,** the new technology for Injectable Composite resin.



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



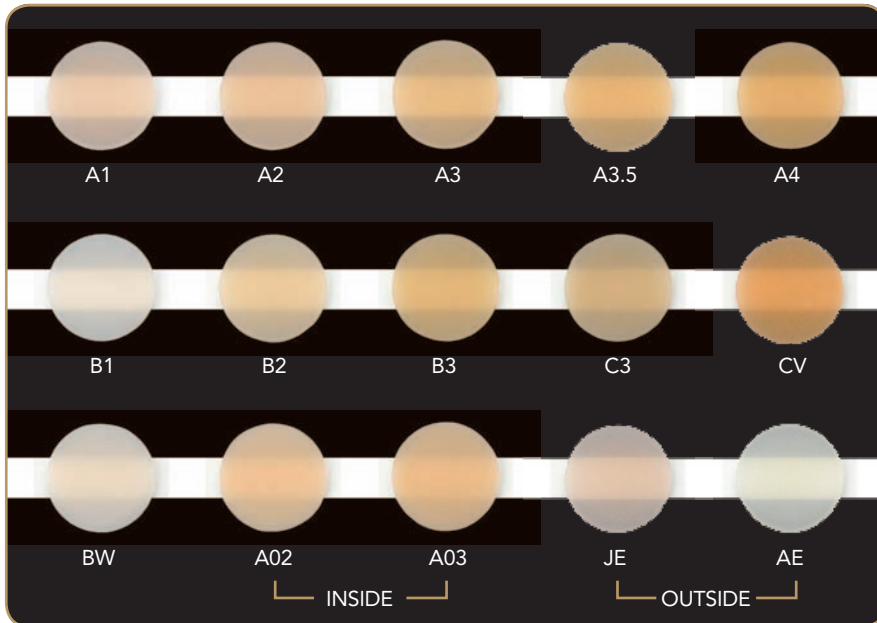
**Nano composite.** Typically contains spherical nano-clusters made up of agglomerated nano fillers of varying sizes



**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 translucencies, 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 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

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

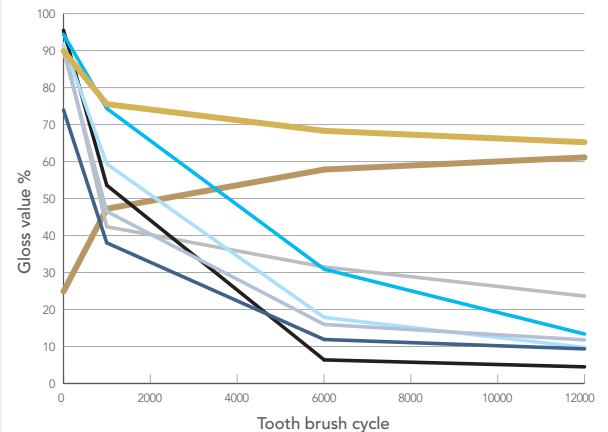
G-aenial Universal Flo gives you and your patients the highest level of aesthetic outcome with a beautiful high gloss finish and excellent gloss retention. You will be amazed that a full strength composite can so quickly and easily deliver a high gloss finish. And your patients will appreciate the self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

Shades A03, A4, A3, AE were used in this restoration.



Dr. S. Koide, Niigano, Japan

### POLISH RETENTION

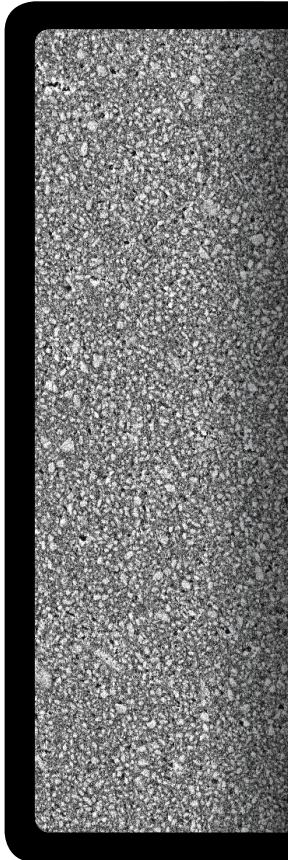


- Beautifill Plus Flow\*
- Supreme Plus Flow\*
- Grandio Flow\*
- Majesty LV\*
- G-aenial Universal Flo
- Supreme Plus\*
- Herculite Ultra\*
- G-aenial Universal Flo (Self-shining)

\* 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



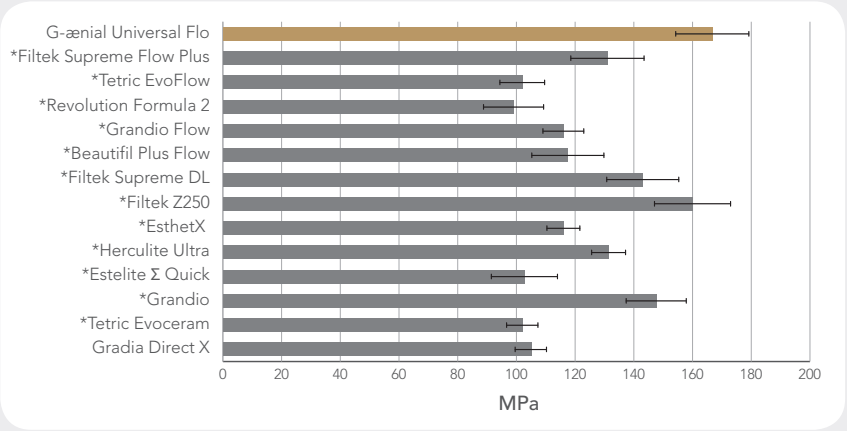
Dr. M. Okaguchi, Tokyo, Japan

### FLEXURAL STRENGTH

## An Injectable Composite with impressive strength

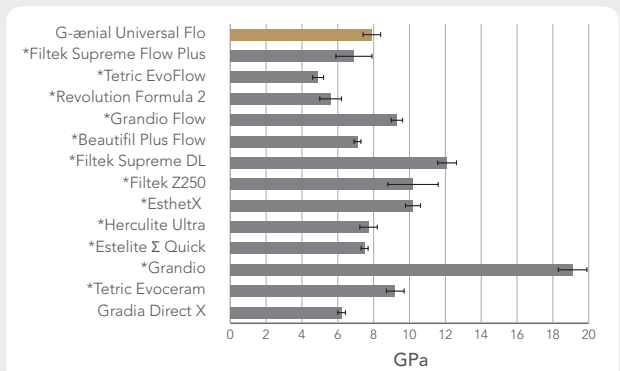
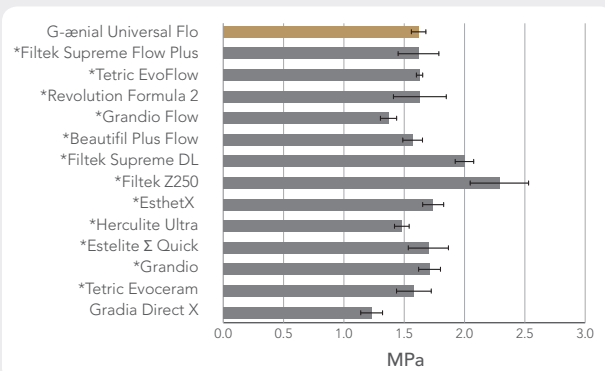
The flexural strength of G-ænial Universal Flo is unmatched by most conventional hybrid composites giving confidence for its universal applications.

\* Not a trademark of GC Corporation



### FRACTURE TOUGHNESS

### FLEXURAL MODULUS



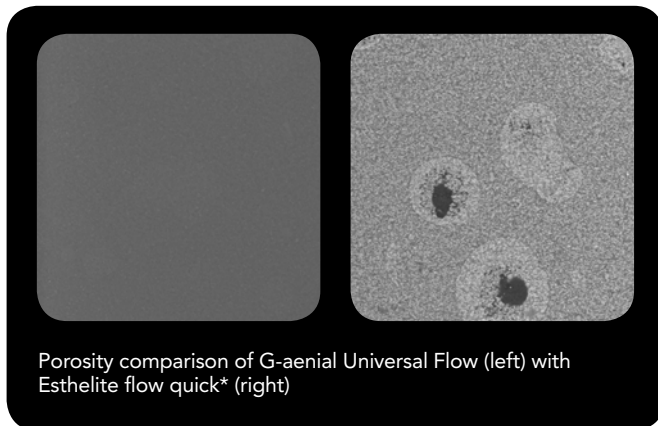
# Wear Resistance and Manufacturing Innovation

## 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.



\* Not a trademark of GC Corporation



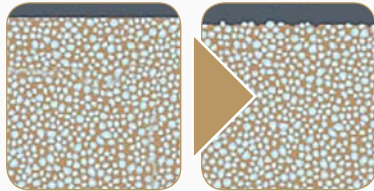
Dr. M. Okaguchi, Tokyo, Japan



Dr. G. Millich, New Zealand



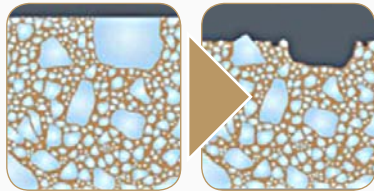
## Confocal Laser Microscope Images of Comparative Toothbrush Wear



After polishing

After wear

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

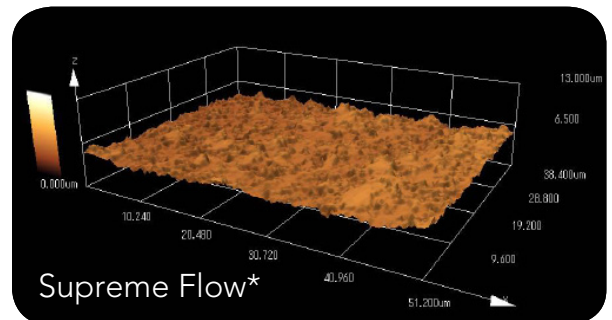
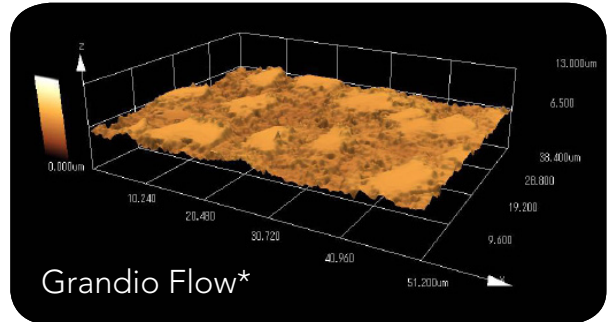
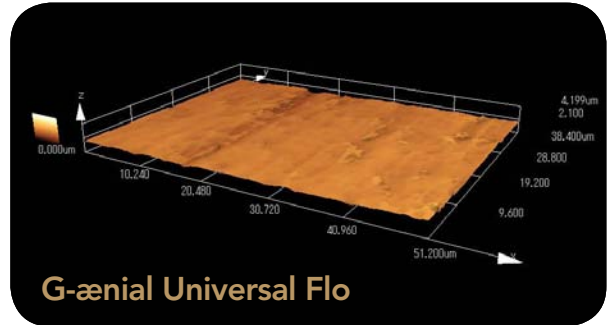


After polishing

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

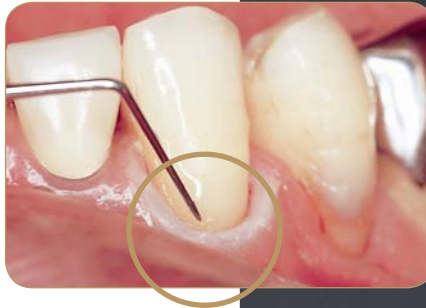
# Economical and ergonomic dispensing

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



## 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 realised with no risk of pull back that might cause voids at critical margins.

Composite placement is exact and controlled with 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.



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

# 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 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 coloured restoration



Removal of metal inlay



Apply G-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** 2mm thickness.

**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?

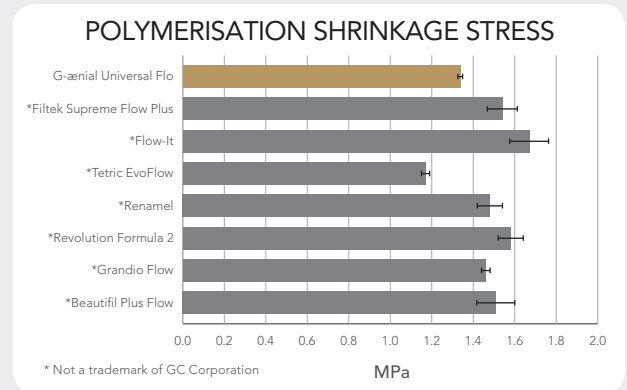
**A** G-ænial Universal Flo contains 2ml of composite per syringe which is twice the quantity found in a flowable syringe, and similar to the quantity of a conventional composite syringe.

**Q** What is the % volumetric 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.



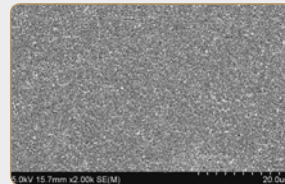
**Q** Why do the intra oral tips screw on?

**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.

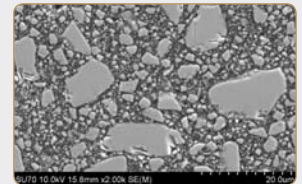


- Q** Are there any technique tips suggested for placement of Injectable Composite?
- A** Filling from the base of the tooth and moving the material with the dispensing tip are recommended. When removing the tip from the composite after placement the potential for 'stringing' is decreased if the tip 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 nanometer sized 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 composite typically contain a range of filler sizes including larger glass fillers up to several microns 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-aenial 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 does of G-BOND

50 x micro-brush applicators



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