

G-ænia



Capturing
the genius
of nature

GC

G-ænial – A universal composite that acknowledges that



G-ænial ANTERIOR features enhanced light scattering abilities, to bring a more natural vitality and exceptional shade matching for superior anterior aesthetics.



Prof. M Feumans, Belgium

They have subtle optical differences...



G-ænial POSTERIOR introduces shades with a deeper concentration of colour, to better match the optical properties of posterior teeth.



Dr. J. Iñapia Guadix, Spain

G-ænial is a high strength, low shrinkage stress composite. Both Anterior and Posterior shades can have universal application

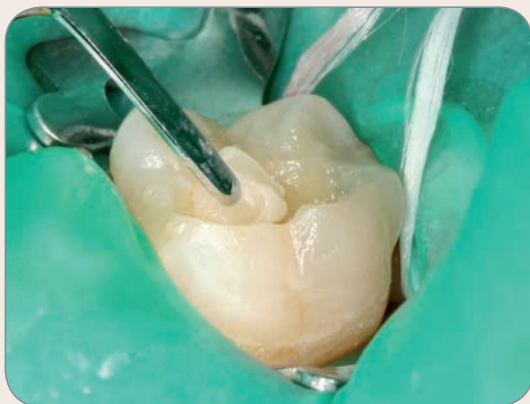
anterior and posterior teeth are different



Dr J Tapia Guadix, Spain

G-ænial ANTERIOR
is designed so that
clinicians can shape,
flow and sculpt.

and they present different placement challenges



Dr J Tapia Guadix, Spain

G-ænial POSTERIOR
has a consistency
that's firmer and
more packable.

(anterior shades can be used in posterior restorations and vice versa).

G-ænial – A universal composite that captures the genius of nature with one shade simplicity

G-ænial is created with natural beauty forefront in mind, so that clinicians have a composite with superior aesthetics and exceptional shade matching ability that will allow single shade restorations to blend seamlessly with the tooth.



Dr M Moran, Australia



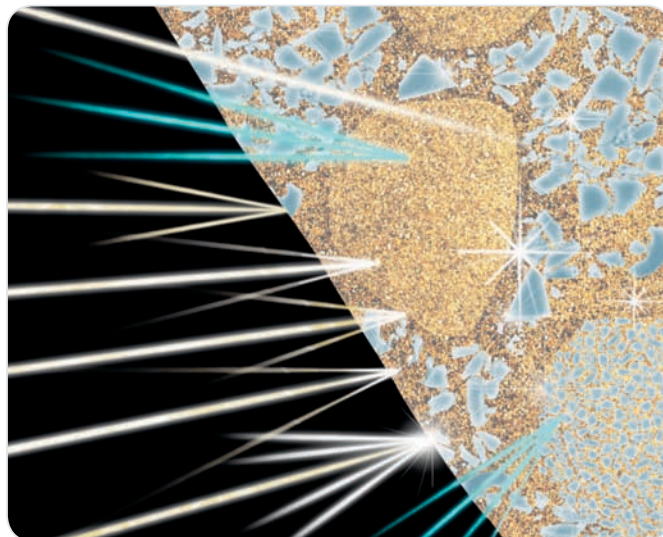
Dr J Tapia Guadix, Spain

The genius behind G-ænial

How science creates beauty

It's all about getting the light right! Our perception of the appearance of teeth is defined by the reflection of light from different angles. Light reflection is determined by differences in tooth structure.

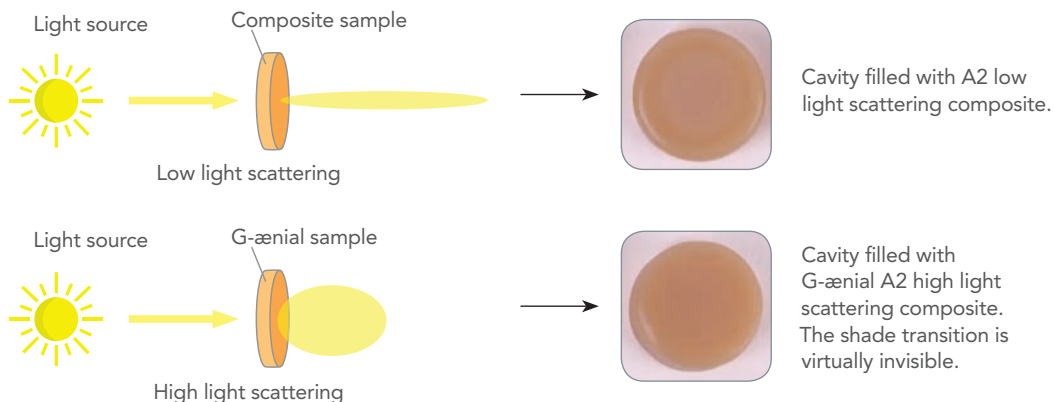
The excellent light scattering ability of G-ænial is achieved through an extremely diverse structural composition that enables it to mimick the reflectivity of a natural tooth. Like the tooth, G-ænial contains different interfaces with different optical properties, resulting in varied reflection of light.



Demonstrating how high light scattering creates a chameleon effect



Trial material
Cavity made
in a block of
composite A3



G-ænial ANTERIOR – Beautiful natural high gloss restorations

Optimised handling

With G-ænial ANTERIOR you gain total control over your results with its smooth, non-sticky and sculptable handling.

More working time

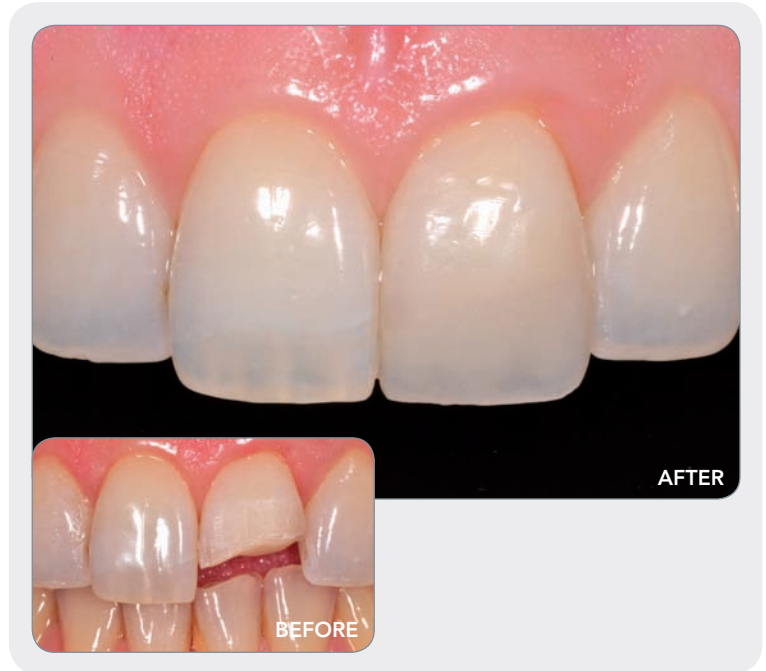
Reduce stress with working time under ambient light extended to 4 minutes.

High gloss finish

G-ænial ANTERIOR polishes quickly to a high gloss finish and the diverse filler surfaces within G-ænial ensure the surface really does shine! For best results, we recommend diamond burs, polishing points and discs. To obtain a high gloss lustre, polishing pastes can be used.

Simplicity, even when complexity presents

G-ænial ANTERIOR is available in a choice of 22 shades. For most restorations, the use of standard shades alone is sufficient to produce beautiful, natural results. For complex cases, two additional shade groups have been defined; Inside and Outside shades.



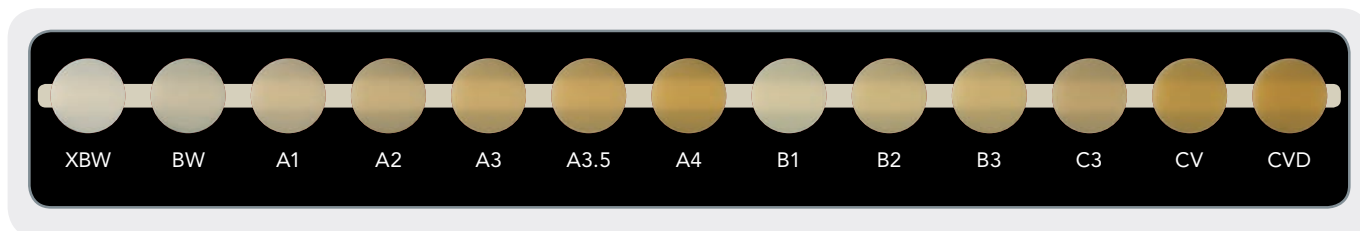
Prof M Peumans, Belgium



Dr. J Sabbagh, Belgium

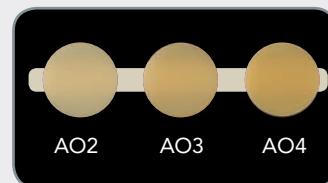
G-ænial ANTERIOR 140% Al radiopacity

G-ænial ANTERIOR – Standard shade range



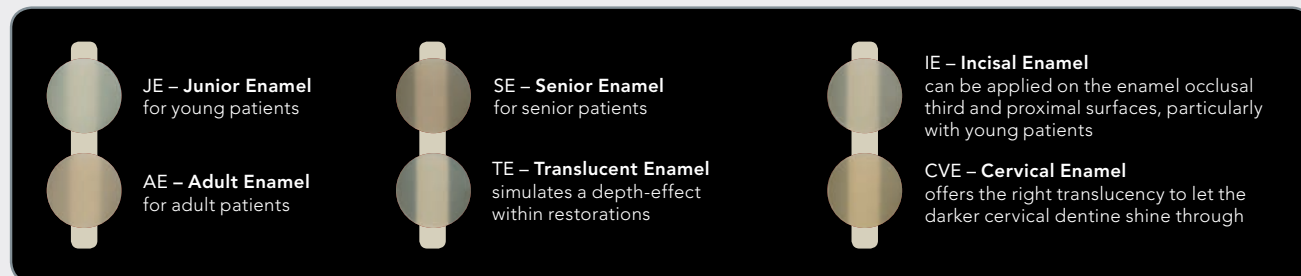
Inside shades

Inside shades add opacity and eradicate dark shinethrough often encountered in class IV restorations. They can also be placed behind a standard shade to add warmth to the final colour. Inside shades are particularly useful to mask dentine discolouration and to hide the preparation line in large class V restorations.



Outside shades

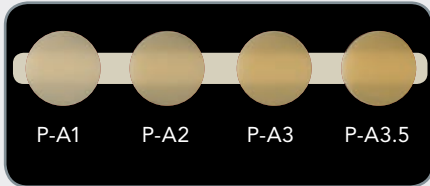
Outside shades replicate enamel and give more depth to the final restoration. Ideally we relate the colour and translucency of the natural enamel to the **age of the patient** and the choice of the enamel shade is made accordingly. Outside shades will also help create specific visual effects, for example to help mimic the value (lightness/darkness) of a tooth.



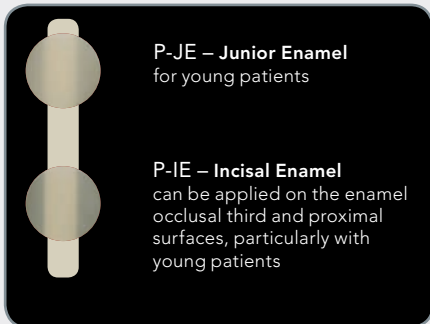
G-æniel POSTERIOR – low stress simplicity

Simple shade selection

G-æniel POSTERIOR has a simple selection of four basic shades that will blend beautifully with the surrounding tooth colours.



G-æniel POSTERIOR has two outside enamel shades P-JE and P-IE. These shades copy the value of a tooth, to mimic age-dependent changes in the enamel and to give more depth to a final restoration.



G-æniel POSTERIOR 250% Al radiopacity

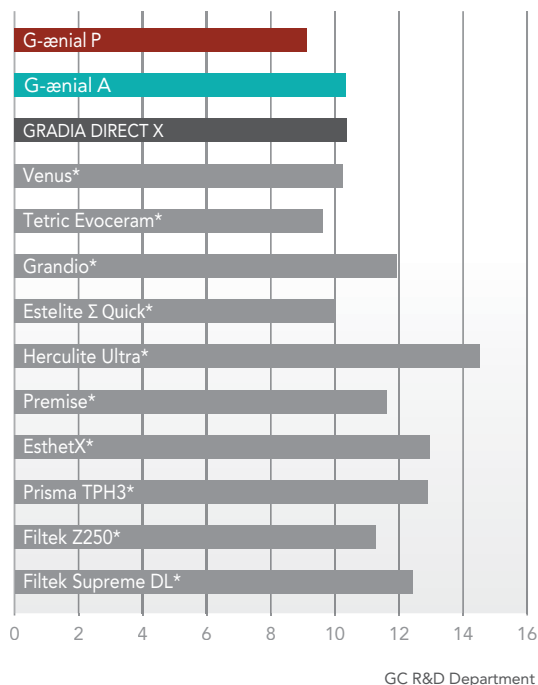
Low shrinkage stress

G-ænial is formulated for both strength and low shrinkage stress. Posterior restorations are often at greater risk of marginal breakdown and G-ænial helps minimise the risk through reduced polymerisation shrinkage stress at the adhesive tooth interface.

Firm handling

Extensive feedback evaluations clearly identified a need for a firmer material for posterior restorations that gives more control to contour and build anatomical form. G-ænial POSTERIOR has a more packable consistency, yet still flows under pressure to ensure intimate adaptation to the cavity floor.

Shrinkage Stress (N)



Shrinkage stress is the amount of stress created as a result of polymerisation shrinkage combined with other influencing factors – eg: a composite’s modulus of elasticity and the nature of its polymerisation reaction.

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Clinical observations

Case 1



1. A 79-year old patient presented for treatment after injury.



2. An alginate impression of the anterior sections (upper and lower) was taken to make a wax mould for treatment planning and to provide a greater ability to handle the shapes and volumes of the various composite layers.



3. Both central maxillary incisors were prepared using diamond burs. Tooth 11 required a large bevel to increase the surface for adhesion to enamel and to obtain greater retention.



7. The interproximal areas were filled with a thin layer of enamel composite (G-aenial AE) which bonded to the previously created palatine surface.



8. To conceal the fracture line, G-aenial AO3 was placed along this line, with small indentations to transform it into an irregular line.



9. G-aenial A3 was used to recreate the rest of the dentine, which gave shape to the mamelons and covered part of the bevel.



4. After etching and application of G-BOND, a palatine silicone ring was positioned (previously prepared on the wax working model) to recreate the layer of palatine enamel.



5. A thin layer of enamel composite (G-ænial AE) is applied with a flat, slightly moistened brush.



6. Carefully place transparent acetate matrices in the interproximal spaces, using transparent wedges to fix them in place.



10. An extremely thin layer of highly translucent enamel composite (G-ænial TE) was placed, leaving one section of the preparation bevel with no cover, carefully filling the space around the mamelons to recreate a natural enamel zone.



11. G-ænial AE is used to create the vestibular enamel layer.



12. After completion, matrices and wedges are removed and polishing begins using interproximal strips, tungsten carbide burs, diamond-coated rubber pads and polishing discs. A diamond paste was used for final polishing.

Clinical observations

Case 2



1. Fractured tooth.



2. Enamel margins selectively acid etched prior to dentin conditioning with polyacrylic acid.



3. Fuji IX EXTRA is manipulated into place with a microbrush dipped in Fuji LINING LC.



4. A thin layer of flowable is applied to the cavity floor and distal enamel margin and polymerised.



5. The restoration is then incrementally built with G-aenial POSTERIOR using P-A2 for the deeper sections and P-A1 for the final surface layer.



6. Completed restoration.

Case 3



1. Old composite restoration requires replacement.



2. Cavity preparation.



3. Completed restoration using G-ænial ANTERIOR shades A2, AE.

Dr. P. Sheridan, Australia

Case 4



1. Before.



2. Cavity preparations to be restored with G-ænial ANTERIOR A3 and JE.



3. White and brown tints highlighted the occlusal anatomy.

Dr. J. Smithson, United Kingdom

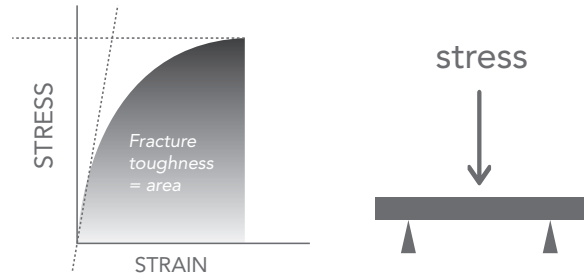
Strong and flexible

Fracture toughness is a measure of a material's ability to resist the propagation of a formed crack, also defined as the toughness against bending stress.

Modulus of elasticity is a measure of the rigidity of the material; it is defined by the initial slope of a stress-strain curve.

Flexural strength is a measure of a material's ability to resist deformation under load.

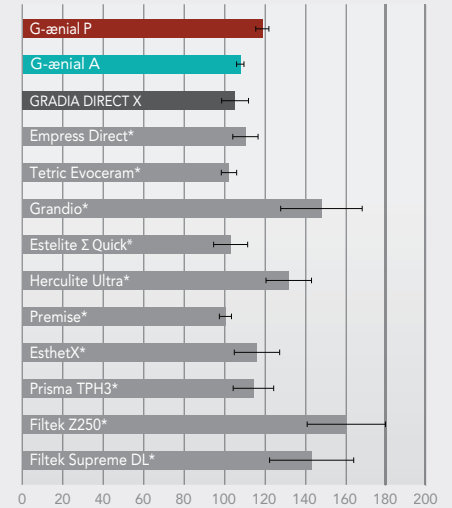
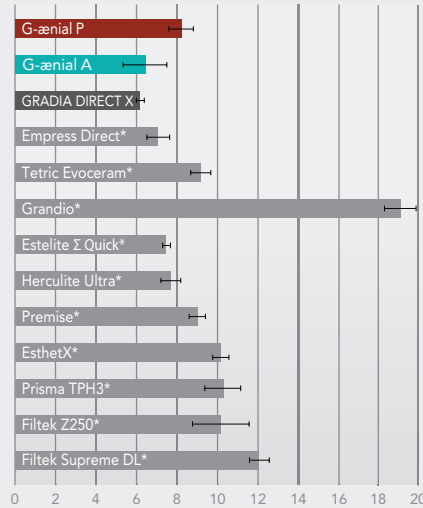
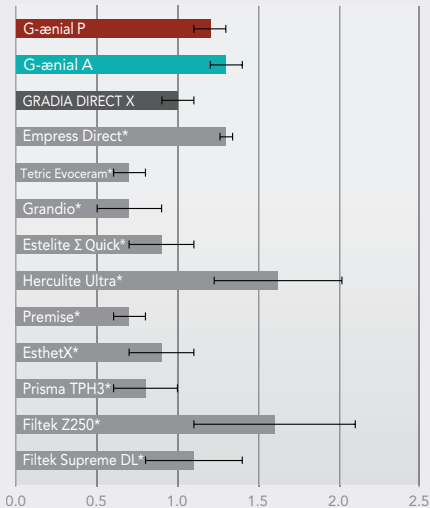
Mechanical properties



Fracture Toughness (Mpa)

Modulus of Elasticity (Gpa)

Flexural strength (Mpa)

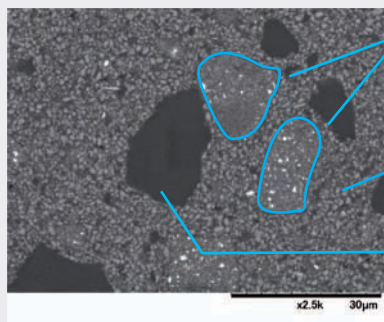


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Questions and Answers

Q What is the composition of G-ænial?

A G-ænial is a light cured, radiopaque microfill hybrid composite restorative with a combination of fillers, including two types of pre-polymerised fillers (PPF). The pre-polymerised fillers contribute to its exceptional chameleon effect and low level of shrinkage stress.



17µm PPF containing 400nm Strontium glass and 100nm Lanthanoid fluoride

850nm Silica glass (ANTERIOR)
850nm Fluoroaluminosilicate glass (POSTERIOR)
16nm Fumed silica

16µm PPF containing 16nm silica

Q What is the filler by volume and by weight?

A.

	ANTERIOR	POSTERIOR
% filled by weight	73%	77%
% filled by volume	64%	65%

Q Does G-ænial contain Bis-GMA?

A No, G-ænial is Bis-GMA free; the matrix consists of a mixture of UDMA and dimethacrylate comonomers.

Q What is the shelf life of G-ænial?

A The shelf life is 3 years. G-ænial is very stable as it incorporates new technology that improves the bond between the silica and matrix resin.

Q What initiator is used in G-ænial?

A G-ænial uses a combination of camphorquinone and amine as the catalyst. Light activation can be carried out with a quartz halogen, plasma or LED curing unit.

Q What is the depth of cure for each shade?

A.

ANTERIOR		
Irradiation time		
Halogen/LED (700mW/cm ²)	20 sec.	40 sec.
Shade		
TE, IE, JE, SE, CVE	3.0mm	3.5mm
A1, A2, B1, B2, XBW, BW, AE	2.5mm	3.0mm
A3, B3	2.0mm	3.0mm
A3.5, A4, C3, AO2, AO3, AO4, CV, CVD	1.5mm	2.5mm

POSTERIOR		
Irradiation time		
Halogen/LED (700mW/cm ²)	20 sec.	40 sec.
Shade		
P-A1, P-A2, P-JE, P-IE	2.5mm	3.0mm
P-A3, P-A3.5	2.0mm	3.0mm

G-ænia

QUICK START KIT SYRINGES

7 syringes of:

A1, A2, A3, B2, JE, AE, IE and a shade guide

Refill

1 syringe of all available colours

QUICK START KIT UNITIPS

5 unitips each of:

A1, A2, A3, B2, JE, AE, IE and a shade guide

Refill

20 unitips of: A1, A2, A3, A3.5, AO3, CV, AE, IE,

P-A1, P-A2, P-A3, P-A3.5, P-JE, P-IE

10 unitips of: XBW, BW, A4, B1, B2, B3, C3, CVD, AO2,

AO4, JE, TE, SE, CVE

SHADES ANTERIOR

Standard: XBW, BW, A1, A2, A3, A3.5

A4, B1, B2, B3, C3, CV, CVD

Inside special: AO2, AO3, AO4

Outside special: JE, AE, SE, IE, TE, CVE

SHADES POSTERIOR

Standard: P-A1, P-A2, P-A3, P-A3.5

Outside special: P-JE, P-IE

ACCESSORIES

Shade guide, Unitip Applier

Content per unitip: 0.16 mL (0.28 g)

for anterior and 0.16 mL (0.33 g) for posterior

Content per syringe: 2.7 mL (4.7 g)

for anterior and 2.7 mL (5.5 g) for posterior



GC

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