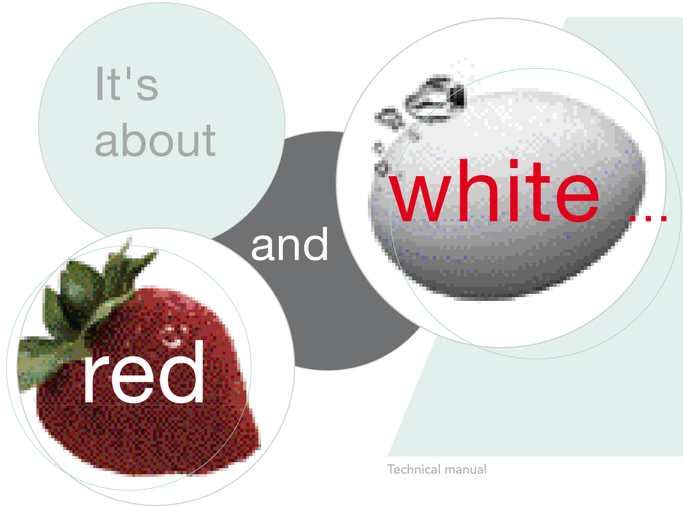
GRADIA gum shades

LIGHT-CURED GUM SHADE SYSTEM



Technical manual

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NATURE-BASED SHADE SELECTION

GRADIA gum shades system has been designed on the basis
of extensive natural gingiva shade analysis.
The following photographs show four examples of natural gum tissues.
As a practical guide for everyday shade selection,
one possible Gum Opaque and Body combination is proposed.
Depending on the individual shade, other combinations of GRADIA gum shades are possible.

Gum Opaque: GO11
GRADIA gum shades: G21

Gum Opaque: GO13
GRADIA gum shades: G22

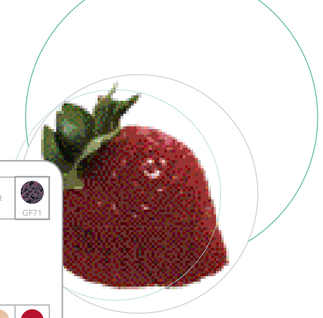
Gum Opaque: GO12
GRADIA gum shades: G23

Gum Opaque: GO13
GRADIA gum shades: G24

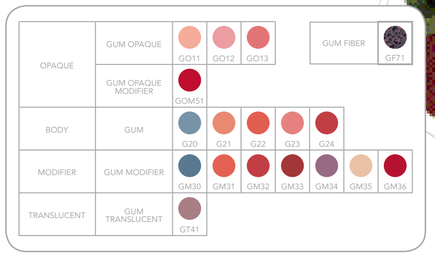
GRADIA gum shades

GRADIA gum shades COLOR CHART ▶

GC GRADIA gum shades color chart



1. GRADIA gum shades COLOR CHART



2. CURING TIMES AND DEPTHS

Curing times for GC Gum Opaque and GC Gum Opaque Modifier

Light curing unit	Pre-cure
GC LABOLIGHT LV-III	1 min

Curing times for GC Gum Modifier and GC Gum Translucent

Light curing unit	Pre-cure	Final cure
GC LABOLIGHT LV-III	30 s	3 min
GC STEPLIGHT SL-I	10 s	–

Curing times for GC GRADIA gum shades using GC STEPLIGHT SL-I and GC LABOLIGHT LV-III

	GC STEPLIGHT SL-I Pre-cure	GC LABOLIGHT LV-III Pre-cure	GC LABOLIGHT LV-III Final cure
GC Gum Opaque	–	1 min	–
GC Gum Opaque Modifier	–	1 min	–
GC Gum Body	10 s	30 s	–
GC Gum Modifier	10 s	30 s	3 min
GC Gum Translucent	10 s	30 s	–

Curing Depths

	GC STEPLIGHT SL-I Pre-cure 10s	GC LABOLIGHT LV-III Pre-cure 1 min	GC LABOLIGHT LV-III Final cure 3 min
GC Gum Opaque	–	0.2 mm	–
GC Gum Opaque Modifier	–	0.2 mm	–
GC Gum Body	1.1 mm	–	2.5 mm
GC Gum Modifier	0.8 mm	–	1.5 mm
GC Gum Translucent	3.0 mm	–	5.0 mm

3. GC GRADIA gum shades COMPONENTS

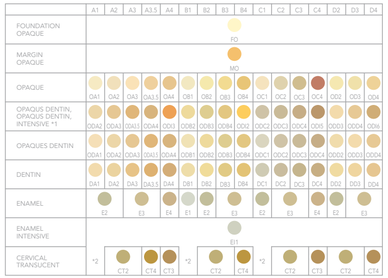
This system includes three composite viscosities (types) designed for the different areas of gingival tissue:

Liquid type: GC Gum Opaque
Paste type: GC Gum Body
Gel type: GC Gum Modifier, GC Gum Translucent

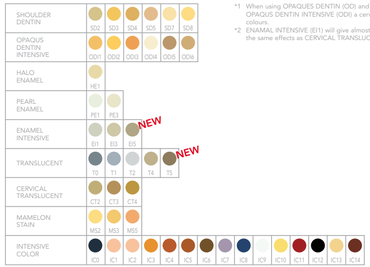
	Type	Product Details
GC Gum Opaque	Liquid	A liquid composite in 3 shades. Has exceptional masking properties and is easy to apply.
GC Gum Opaque Modifier	Liquid	A liquid composite in 1 shade only. • Can be used to adjust and individualize Gum Opaque.
GC Gum Body	Paste	A paste composite in 5 shades. The shades have been selected on the basis of analysis of a multitude of natural gum tissues. • Can be used as a single shade, mixed or in combination with other shades of GRADIA gum shades paste.
GC Gum Modifier	Gel	A gel composite in 7 shades. Because of its low viscosity, the modifiers are easy to apply in narrow spaces and thin layers. The shades vary from a translucent shade (GM30) to 5 different reddish shades and one additional shade to imitate shade effects of bone areas (GM35). • Can be used to modify GRADIA gum shades, combined with each other, or applied on gum pastes for individual shading.
GC Gum Translucent	Gel	A gel type composite in 1 shade only. Because of its special composition, the translucent material (GT41) is easy to apply in narrow spaces and thin layers. • Can be used to cover Gum Fiber.
GC Gum Fiber	Fiber	Red fibers to reproduce blood veins. Gum Fiber is easy to apply on the inhibition layer and must be covered e. g. by GumTranslucent (GT41).

4. GC GRADIA COLOR CHART

For build-up



For Characterisation



*1 When using OPAQUES DENTIN (OD) and OPAQUS DENTIN INTENSIVE (OD0) a cervical colours.
*2 ENAMAL INTENSIVE (EI1) will give almost the same effects as CERVICAL TRANSLUCENT.

The GRADIA gum shades Technical Manual describes only the build-up technique. Before using the material, please read carefully the instructions for use included in the package.

GC GRADIA Micro-Ceramic Composite System

GRADIA is a comprehensive microfilled composite system for use in both anterior and posterior regions.

The indications of GRADIA include full crowns, metal-backed crowns with or without incisal support, veneers, inlays and onlays as well as implant superstructures. GRADIA shows excellent handling properties and permits highly aesthetic results. GRADIA restorations have a value, hue and chroma close to natural teeth. GC has achieved this lifelike appearance by carefully adapting the GRADIA shade system to the application technique.
The GRADIA layering technique is very similar to popular ceramic restoration techniques.

Introduction

Microfilled composite resins are well established as high quality restorative materials. Taking advantage of this technology GC has designed a light-cured composite for the highly aesthetic reproduction of missing gingival tissue. GRADIA gum shades is especially indicated for implant superstructures, and other fixed or removable prostheses. Dental technicians wish to work with a truly natural shade system. Therefore GC has analysed a wide range of natural gingival shades. The GRADIA gum shades layering technique and a variety of modifiers provide unlimited possibilites for individual gingiva reproduction.

"No white aesthetics without red aesthetics"

Red aesthetics are just as important as white aesthetics for patients' satisfaction and wellbeing. The natural appearance of the gum tissues has to be respected as much as the shape, form and shade of the restored teeth at any age. This includes an exact length ratio of the crown and the restored atrophic periodontal and gingival tissues. With GRADIA gum shades this ratio can be easily achieved using light-curing materials of varying viscosity.

Based on GRADIA Micro-Ceramic Composite

New standards have been introduced with GRADIA dental crown and bridge composite. Based on this material GRADIA gum shades shows the same outstanding physical properties, natural appearance and easy handling. Used in combination with GRADIA and any of the compatible metal, ceramic and composite primers, GRADIA gum shades shades offers the additional benefit of a well-adapted material system.

Contents

Indications Features Benefits

Indications for use of GRADIA gum shades:

- Reproduction of gingival tissues in:
  - Implant suprastructures
  - Crowns and bridges
  - Combination technique
  - Model casting technique

GRADIA gum shades Features and Benefits

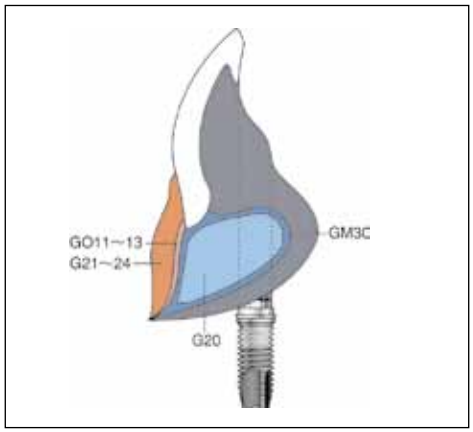
features	benefits
• Gum shades based on natural gingival shades • Variety of gum shades and modifiers	• Natural appearance • Individual adaptation to natural gingival shades • Perfect shade reproduction for high aesthetic demands • Unlimited possibilities for gingival shade imitation
• Composition based on GRADIA • Micro-filled composite with high strength and wear resistance • Non-sticky texture	• Easy application and build-up • Easy to polish • Perfect adaptation to GRADIA composite system • Easy to clean with the tooth brush • Colour stability • Long service life
• Specially developed syringe system	• Environmentally friendly usage

GC GRADIA gum shades Layering Diagram – Gingiva Build-up

Bonding systems used in connection with GRADIA and GRADIA gum shades

- METALPRIMER II is applied on metal surfaces for bonding of metal/composite interface.
- COMPOSITE PRIMER is used to recreate the inhibition layer prior to additional composite placement.
- CERAMIC PRIMER is used for bonding of ceramic/composite interface.

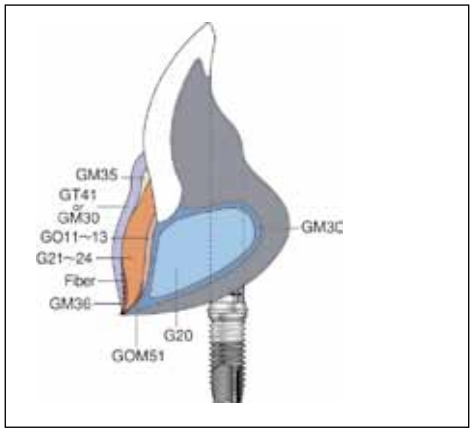
Basic Build-up (using a "Gum Block")



GM30 G20*	A Gum Block* is built up step by step using GRADIA gum shades G20*. The Gum Block is pre-cured separetely and fixed with a thin layer of Gum Modifier*.
GO11 – GO13*	2-shade mix of Gum Opaque.
G21 – G24*	2-shade mix of Gum Body.

* see notes p. 3 and p. 13

Multi-layered build-up (using a "Gum Block*") Individual and creative technique using various gum pastes, modifiers and fibers.

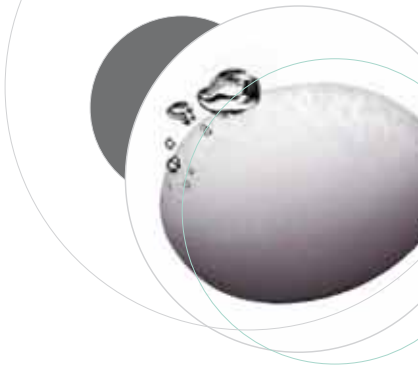


GM30 G20*	A Gum Block is built up step by step using GRADIA gum shades G20. The Gum Block is pre-cured separately and fixed with a thin layer of Gum Modifier.
GOM51	Gum Opaque Modifier.
GO11-GO13*	2-shade mix of Gum Opaque.
G21-G24*	2-shade mix of Gum Body.
GF71	Gum Fiber.
GM35	Gum Modifier for reproduction of bone tissue shining through the gingiva.
GM36	Gum Modifier for more intensive red shading of tissue.
GT41 or GM30*	The mixture is applied as a final cover over the total gum area, to give the tissue a slightly softer shade.
	Each step is repeatedly pre-cured according to the curing chart. * GRADIA gum shades pastes can be applied as a single shade, or can be mixed.

(for more details please refer to: Step by Step-Procedure)

* see notes p. 3 and p. 15

GC GRADIA gum shades Build-up: Step-by-Step Procedure



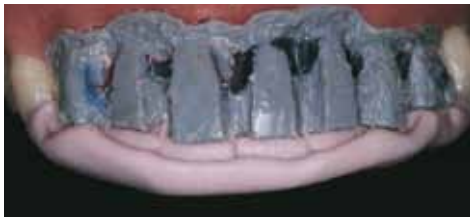
1. Wax-up

1. Apply wax separator (MULTISEP) to the master die (e. g. FUJIROCK EP).
Wax-up and contour the crowns and the gingival tissues.

1.1. Lingual view of the wax-up.

1.2. Prepare a lingual silicone index using EXAFLEX PUTTY Type.

2. Metal Framework



2. Cut back the wax and apply a thin layer of ADHESIVE II for RETENTION BEADS II SSS to the retention area. Let the surface dry and become tacky.
Sprinkle a layer of RETENTION BEADS II SSS evenly over wax surface.
Sprue and invest using phosphate-bonded investment and cast in the normal manner.

2.1 Lingual view

2.2 Sandblast retention area with clean 50-110 µm aluminum oxide.
Apply oil-free, dry air to clean the metal frame.

3. Bonding

3. Apply one layer of METALPRIMER II to the retention area using a clean brush.
Allow to dry for a few seconds.

4. Composite veneer build-up with GC GRADIA

4. Apply a layer of GRADIA FOUNDATION OPAQUE carefully to the retention area using a clean, flat brush. At this point, apply the opaque material a little further cervically, taking into account the transitional contact area with the gum tissue to be reproduced.

Light cure: 1 min LABOLIGHT LV-III.

4.1. Apply GRADIA OPAQUE, considering the crown length.

Light cure: 1 min LABOLIGHT LV-III.

GC GRADIA gum shades Build-up: Step-by-Step Procedure

4.2. If necessary, apply one or two thin coats of GRADIA OPAQUE.

Light cure: 1 min LABOLIGHT LV-III.

4.3. Attach a silicone index lingually to control the layer thickness. Build up the veneers using GRADIA micro-ceramic composite by standard techniques. Light cure each layer separately according to the curing times for GRADIA.

4.4. Lingual view
(For further details concerning the GRADIA composite build-up, refer to the GRADIA technical manual or instruction, for use.)

5. Optional: GC GRADIA gum shades – preparation of a separate "Gum Block"

5. Prior to shade build-up of the gingiva, press a portion of translucent GRADIA gum shades paste (G20) between two sheets of transparent polyethylene film.*

Light cure: 3 min LABOLIGHT LV-III.

5.1. Bonding:
Apply METALPRIMER II to metal framework in areas where gum tissues will be reproduced.
Then apply a thin layer of translucent Gum Modifier (GM30) thoroughly covering the retention area.*

5.2. Apply COMPOSITE PRIMER thinly to the Gum Block.

Light cure: 1 min LABOLIGHT LV-III.

Position, attach and light cure the Gum Block.*

Light cure: 3 min LABOLIGHT LV-III.

6. Buid-up of GC GRADIA gum shades

6. Apply two thin layers of Gum Opaque to the entire gum tissue area.

Light cure: 1 min LABOLIGHT LV-III.

6.1. Accentuate with Gum Opaque Modifier (GOM51) as required. This material is effective in expressing the shade transition of the gum tissue in contact with the buccal mucosa.

6.2. After application of Gum Opaque.

* See notes p.3, 13 and 15

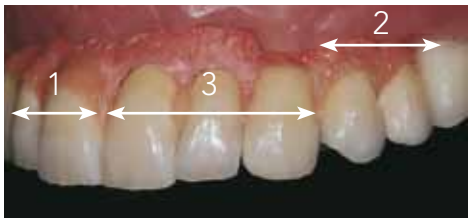
GC GRADIA gum shades Build-up: Step-by-Step Procedure

6.3. Apply Gum Body.
Use a darker shade in between the roots and a lighter shade to imitate the root.

Light cure: 30 s* LABOLIGHT LV-III.

6.4. Apply COMPOSITE PRIMER to all cervical areas which were made longer than required.
Then build-up GRADIA BODY to reproduce a natural-looking transitional area between the veneers and the gum tissue.

Light cure: 1 min LABOLIGHT LV-III.



6.5. Build up and pre-cure Gum Body.
First build up the distant sections (no. 1 and 2), to avoid crack formation due to polymerization shrinkage. Then build-up the middle section (no.3) and light cure for 30 seconds to bond all sections together.

Light cure: 30 s* LABOLIGHT LV-III.

6.6. After application of Gum Body.

6.7. Apply Gum Modifier, taking into account the shape of the alveolar bone beneath the gingival tissue and the shade of the transitional area in contact with the buccal mucosa. (A mixture of GM36 and GM33 was applied in this case)

Light cure: 30 s* LABOLIGHT LV-III.

6.8. Application of Gum Modifier GM35.

6.9. Application of Gum Modifier GM32.*

Light cure: 30 s* LABOLIGHT LV-III.

6.10. After application of Gum Modifier .*

Light cure: 30 s* LABOLIGHT LV-III.

6.11. In order to create a deep gingival tissue shade, apply a translucent shade to the surface. To have the Gum Modifier appear in a clear shade, use translucent shade (G20, GM 30). If a softer gum appearance is desired, apply Gum Translucent (GT41).

Light cure: 30 s* LABOLIGHT LV-III.

* See notes p.3 and p.15

GC GRADIA gum shades Build-up: Step-by-Step Procedure

7. Final light cure

7. GRADIA AIR BARRIER is applied before final light curing. After light curing, rinse AIR BARRIER with water.

Light cure: 3 min* LABOLIGHT LV-III.

8. Adjust and polish

8. Adjust and polish using standard techniques and polishing pastes for composites.

8.1. It is unnecessary to use a special diamond polishing paste such as GRADIA DIAPOLISHER.

* See notes p.3

Notes

Notes on the use of GRADIA gum shades

1. Gum Block	• If the thickness of the Gum Block exceeds 5 mm, prepare in sections and bond sections together. Place and attach the first block as previously described. Then prepare a second block and light cure for 3 minutes*. Coat the bonding surfaces of both the first and second blocks with COMPOSITE PRIMER. Light cure each block for 1 minute*. Apply GM30 to the surface and attach the second block to bond to the first one. Light cure: 3 min in LABOLIGHT LV-III. The use of a Gum Block will minimize curing shrinkage and allow build-up of a defined layer of GRADIA gum shades material, which makes the following procedure easier.
2. Gum Body Gum Translucent materials (GT41, G20, GM30) Gum Modifier	• When applying any of GRADIA gum shades materials in extensive area, build up in sections of 2-3 teeth and light cure for 30 seconds*, respectively.
3. Gum Fiber	• When adding Gum Fiber, place the fibers onto the air inhibited layer to fix. Cover with a layer of Gum Translucent (GT41) and light cure.
4. Gum Modifier	• Gum Modifier shades can be mixed depending on the individual requirements.
5. Curing Time	• The STEPLIGHT SL-I cannot be used to light-cure Gum Opaque materials. • When using a hand-held light curing device*, apply light from all directions for complete polymerization. • The STEPLIGHT SL-I cannot be used for final curing. • When using a hand-held light curing device*, apply light from all directions for complete polymerization. • For details of light curing, please refer to page 3.
6. Gum Fiber	• When using Gum Fiber, cover with a layer of Gum Translucent (GT41) or GRADIA gum shades (G20).
7. Polishing	• Glossy resin surfaces can be obtained without a special polishing material.

* See notes p.3

Bonding Systems

Bonding Systems for GRADIA and GRADIA gum shades: Step by Step

GC METALPRIMER II

Bonding agent for metal/resin interfaces
1. Sprinkle RETENTION BEADS II SSS on the wax surface to enhance mechanical bond strength. Invest and cast as usual.
2. Sandblast the metal surface with clean 50-110 µm aluminium oxide.
3. Clean the surface with dry, oil-free air.
4. Immediately apply METALPRIMER II once or twice using a clean, flat brush.
5. Allow to dry for a few seconds.
6. Apply FOUNDATION OPAQUE when using GRADIA composite. If no opaque layer is needed (see build-up of Gum Block), a thin layer of Gum Modifier (GM30) is applied. The further build-up is carried out according to the usual procedure.

GC COMPOSITE PRIMER

Light-curing bonding agent for priming of additional composite layers
1. To add resin to a veneer build-up of GRADIA or GRADIA gum shades, first roughen the resin surface with a bur and/or sandblast with aluminium oxide.
2. Coat the roughened surface with COMPOSITE PRIMER.
3. Light cure for 1 min in a LABOLIGHT LV-III.
4. Additional composite paste can be applied and light cured according to the curing chart.

GC CERAMIC PRIMER

Two-component bonding system for ceramic/composite interfaces
1. Roughen the bonding surface of porcelain fused to metal using a carborundum point, etc. Clean with dry, oil-free air.
2. Sandblast the bonding surface with 110µ alu-oxid or apply a fluoracid etching gel.
3. Clean by rinsing with water and dry.
4. Mix CERAMIC PRIMER A & B. Apply to the bonding surface and softly dry with air.
5. Apply COMPOSITE PRIMER to the bonding surface and spread thinly with air. Light-cure for 1 minute using the LABOLIGHT LV-III.
6. Apply GRADIA to the bonding surface.

(Please refer to special instructions for use of each product)

GC GRADIA gum shades Packaging

GC GRADIA gum shades Starter Package

2 Gum Opaque - 2.4 ml
GO11 , GO13

4 Gum Body - 2.9 ml
G21, G22, G23, G24

1 Gum Translucent Gel - 2.4 ml
GT41

Accessories:
- 5 Disposable Palettes
- 1 Light Protective Cover
- 1 Mixing Pad No. 22
- 1 Brush No. 7
- 1 GRADIA gum shades Color Chart
- 1 GRADIA Shade Guide Kit

GC GRADIA gum shades Refills

3 Gum Opaque - 2.4 ml
GO11, GO12, GO13

1 Gum Opaque Modifier - 2.4 ml
GOM51

5 Gum Body - 2.9 ml
G20, G21, G22, G23, G24

7 Gum Modifier - 2.4 ml
GM30, GM31, GM32, GM33, GM34, GM35, GM36

1 Gum Translucent - 2.4 ml
GT41

1 Gum Fiber - 0.4 g
GF71

Related Products

GC GRADIA Micro-Ceramic Composite System:

GRADIA Standard Set (6 shades), GRADIA Master Set (10 shades)	In addition each set contains all bonding systems needed for safe metal and composite bonding: 1 METALPRIMER II, 1 COMPOSITE PRIMER, 1 GRADIA DIE HARDNER, 1 GRADIA SEPARATOR plus accessories.
GRADIA AIR BARRIER	Reduced inhibition layer after polymerization.
GRADIA SEPARATOR	Composite / acrylic resin separator.
GRADIA SHADE GUIDE KIT	For manufacture of customized shade guides with original GRADIA or GRADIA gum shades composite.
GRADIA PLUNGER	Environmentally friendly syringe system. The screw section of the syringe can be re-used by simply replacing the barrel that contains paste.

GC GRADIA Light Curing Units:

STEPLIGHT SL- I	For pre-curing of GRADIA and GRADIA gum shades during build-up procedures (except opaque materials).
LABOLIGHT LV III	For final polymerization of GRADIA and GRADIA gum shades. For polymerization of opaque layers of GRADIA and GRADIA gum shades*.

* See notes p.3 and p.13