Your first choice for effective bonding and desensitisation

Scientific Information
Gluma® Comfort® Bond + Desensitizer
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Description of the product

Gluma Comfort Bond + Desensitizer is a light cured, single component, wet-bonding agent for use in combination with adhesive restorations. With its programmed re-wetting action, it compensates for minor variations in the moisture content of the conditioned dentine surface. With the added benefit of ethanol as solvent, Gluma Comfort Bond + Desensitizer was developed for bonding composite, compomer and Polyglas resins to the tooth structure as well as for bonding amalgams and indirect restorations. The patented chemistry of Gluma Comfort Bond + Desensitizer combines the excellent adhesive bonding with the desensitising action of Gluma Desensitizer.

Composition:
- Methacrylate
- 4-META
- Polyacrylic acid
- Ethanol
- Photoinitiators
- Glutaraldehyde

Indications:
- Bonding of direct composite, Polyglas and compomer restorations
- Bonding of indirect restorations (such as ceramic veneers, ceramic crowns, inlays and onlays) using light-curing or dual-curing cements
- Bonding of fresh amalgam
- Sealing hypersensitive areas of teeth

Advantages:
- Priming, bonding and desensitising in only one bottle
- Simple application without prior mixing
- Suitable both for moist and dry bonding techniques
- Excellent adhesive strength
Clinical application

1. 3 2
2. 4 6 5
3. 15–30 s
4. 5–15 s
5. 1–2 s
6. 3x
7. 15 s
8. 5 s
9. 20 s

Awards

2003 REALITY
Four Star Award

THE DENTAL ADVISOR

Received a 4.5 @ 92 % rating in Vol. 17, No. 8
2-year results with Gluma® Comfort® Bond + Desensitizer

Clinical Evaluation of a New Microhybrid Composite Study (Venus)
Authors: Dunn, J. R., Munoz, C.A., University of Loma Linda/USA
Publication: report to Heraeus Kulzer, data on file
Abridged version

Objective
The purpose of this clinical trial was to evaluate the in vivo performance of the combination of Gluma Comfort Bond + Desensitizer/Venus for anterior restorations over a two-year period.

Materials and Methods
A total of 53 restorations (classes III, IV, V, diastema restorations, veneers) using Venus (Heraeus Kulzer) were placed in the anterior teeth of 28 subjects. Gluma Comfort Bond + Desensitizer was used as the dental adhesive. At two-year, 40 restorations were evaluated. They were evaluated by using modified USPHS evaluation criteria for anatomic form, color match, marginal adaptation, retention, marginal discoloration, surface staining and secondary caries.

Conclusion
In all categories all restorations were ranked Alpha or Beta. None of the subjects exhibited postoperative sensitivity or exaggerated gingival response. Based on the two-year findings of this study, the combination Gluma Comfort Bond + Desensitizer/Venus is a very good choice for anterior restorations.

Results

Alpha/Bravo results after 2 year

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Alpha</th>
<th>Bravo</th>
</tr>
</thead>
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<tr>
<td>Anatomic Form</td>
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<td>0</td>
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<tr>
<td>Shade Match</td>
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<tr>
<td>Marginal Integrity</td>
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<td>0</td>
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<tr>
<td>Retention</td>
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<td>Marginal Discoloration</td>
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<tr>
<td>Surface Staining</td>
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<tr>
<td>Secondary Caries</td>
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</table>
Desensitizing effect of Gluma® Comfort® Bond + Desensitizer

Clinical Evaluation of the Role of Glutardialdehyde in a One-Bottle Adhesive

Authors: Dondi dall’Orologio, G., Lone, A., Finger, W. J.
Abridged version

Objective
To evaluate clinically whether the addition of glutardialdehyde to the one-bottle enamel-dentin adhesive Gluma Comfort Bond (GCB) has a desensitising function, as insinuated by the brand name Gluma Comfort Bond + Desensitizer (GCB+D).

Materials and Methods
Two pain studies following identical protocols were conducted in Abu Dhabi (A) and Bologna (B). Each of the 60 and 59 patients selected, respectively, had two sensitive cervical tooth sites, characterized by a score three or higher on a five-step pain scale: 1 (no), 2 (slight), 3 (mild), 4 (severe), 5 (very severe) discomfort upon application of a 2-second cold air stimulus. The buccal sensitive sites treated in A were generally small, in B larger and in most cases extending into the proximal tooth area. The patients indicated their discomfort level according to the pain scale prior to and immediately after topical application of GCB and GCB+D, respectively, and then at recalls after 1 week, 1 (A) or 3 (B) months, and 6 months. The data was statistically analyzed by $\chi^2$-tests (p<0.05).

Conclusion
Glutardialdehyde was a suitably active and effective component in Gluma Comfort Bond + Desensitizer to prevent post-operative sensitivity when adequate dentin sealing with the adhesive was not obtained.

Results

In the A-study, GCB+D was significantly more effective than GCB after 1 week, 1 month, and 6 months, in the B-study at all recall sessions.

The references to the manufacturer’s name have been expanded by Heraeus Kulzer.
Shear bond strength to dentin

Objective
Gluma One Bond (GOB, Heraeus Kulzer) is a one-bottle adhesive containing UDMA, HEMA, and 4-META in acetone. To reduce the potential for technique sensitivity, the manufacturer has recently developed two adhesives containing the same resin monomers in ethanol. One of the new materials (Gluma Comfort Bond + Desensitizer, Heraeus Kulzer, GCBD) contains glutaraldehyde, and one does not (Gluma Comfort Bond, GCB). The purpose of this study was to evaluate the shear bond strength of the new ethanol-based adhesives versus GOB and a conventional three-step adhesive (Scotchbond Multi-Purpose, 3M ESPE) as a control.

Materials and Methods
Forty bovine incisors were mounted in acrylic, polished to 600-grit, and randomly assigned to four groups (n=10). Dentin was etched for 15 s using 37 % phosphoric acid, rinsed, and lightly dried. After adhesive application and curing, Charisma composite (Heraeus Kulzer) was applied in a #5 gelatin capsule and light-cured. Specimens were loaded in shear using an Instrom at 5 mm/min. Shear bond strengths were calculated by dividing failure load by bonded surface area. ANOVA showed a significant difference in means at p<0.01, so Tukey’s test was used for pairwise comparisons.

Conclusion
The results indicate that Gluma Comfort Bond + Desensitizer provides bond strengths to dentin similar to the control Scotchbond Multi-Purpose and higher than its counterparts Gluma One Bond and Gluma Comfort Bond.

Mean values SBS (±SD, MPa) were: Gluma One Bond – 8.0 (4.4); Gluma Comfort Bond – 10.0 (4.4), Gluma Comfort Bond and Desensitizer – 14.0 (6.0); Scotchbond MP – 17.7 (6.4).

The references to the manufacturer’s name have been expanded by Heraeus Kulzer.
Shear bond strength of Gluma® Comfort® Bond + Desensitizer

Objective
To evaluate the shear bond strength to dentin of new one bottle enamel-dentin adhesives.

Materials and Methods
A total of 60 healthy human premolars were selected. Flat facial surfaces were made with a series of SiC paper into the superficial-to-middle dentin. The following groups were established (12 teeth per group): (1) Single Bond (3M ESPE); (2) PQ1 (PQ); (3) Prime & Bond NT (Dentsply); (4) Gluma Comfort Bond (Heraeus Kulzer); (5) Gluma Comfort Bond + Desensitizer (Heraeus Kulzer). For all adhesives were handled according to the manufacturers’ instructions. Immediately after bonding, the specimens were stored in water for 48 hrs and then thermocycled (500x, 5–55°C). Specimens were sheared at a crosshead speed of 1 mm/min in an Instron/MTS machine. The results were analyzed with an ANOVA and Student-Newman-Keuls (SNK) test.

Comment of Heraeus Kulzer
Gluma Comfort Bond + Desensitizer showed very good results in shear bond strength.

Results

In MPa: Single Bond: 24.9 ± 5.1; PQ1: 24.6 ± 4.3; Prime & Bond NT: 19.8 ± 4.7; Gluma Comfort Bond: 18.0 ± 2.5; Gluma Comfort Bond + Desensitizer: 23.0 ± 3.6. ANOVA showed a statistically significant difference (p<0.05) among the groups. SNK test showed that groups 1 vs 4, 1 vs 3, 2 vs 4, 2 vs 3 and 5 vs 3 were statistically significantly different (p<0.05).

The references to the manufacturer’s name have been expanded by Heraeus Kulzer.