Immediate and 6-month bonding effectiveness of different two-step etch-and-rinse adhesives.

The study reveals the excellent long term bond strength stability of iBOND Total Etch after 6 month of storage time. Stable bonding abilities are important to maintain a strong connection between tooth and composite. Durable restorations help to prevent secondary caries and loss of retention.

Giving a hand to oral health.
**Objective**

Evaluation of the bond strength of different two-step etch-and-rinse adhesives after 6 months of storage.

**Materials and Methods**

Forty-two human molars were cut to expose dentine and assigned to the tested adhesives (N=14) applied after etching as per manufacturers’ instructions. The evaluated adhesives were iBOND Total Etch (Heraeus Kulzer), Optibond Solo Plus (Kerr), Prime&Bond NT (Dentsply). Specimen were prepared for microtensile bond strength test and pulled to failure either after 24 h or 6 months of storage in artificial saliva at 37°C. Data were analyzed by two-way ANOVA (statistical significance was set at 5 %) and Tukey’s post-hoc.

**Results**

<table>
<thead>
<tr>
<th>Adhesive</th>
<th>Baseline Bond Strength (MPa)</th>
<th>6 Months Bond Strength (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>iBOND Total Etch</td>
<td>35.8 ± 10.01</td>
<td>37.8 ± 11.1</td>
</tr>
<tr>
<td>Optibond Solo Plus</td>
<td>50.4 ± 11.3</td>
<td>34.3 ± 11.0</td>
</tr>
<tr>
<td>Prime&amp;Bond NT</td>
<td>33.0 ± 10.3</td>
<td>27.2 ± 10.3</td>
</tr>
</tbody>
</table>

Optibond Solo Plus expresses a significant decrease in bond strength whereas iBOND Total Etch and Prime&Bond NT have similar bond strength values at baseline and remain stable after the 6 months of storage.

**Conclusion**

All evaluated etch-and-rinse adhesives show favourable immediate bond strength values, although after 6 months of storage in artificial saliva not all the tested adhesives report stability in the mechanical properties of the adhesive interface.

**Source**


The study was abbreviated and summarised and all diagrams and titles have been established by Heraeus Kulzer.