Silamat S6

Scientific Documentation
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1. Introduction

1.1 Capsule mixer
Dental products, such as amalgams or cements, which have to be mixed using predetermined components before they are applied, can be easily used in the capsule or injection capsule delivery form. Thus, it is possible to predose the individual components in the required quantity. Consequently, the user does not come in contact with the precursor products. This is particularly advantageous for amalgams, which would require handling with the toxic mercury. Automatic capsule mixers enable adequate and fast mixing of the individual components so that enough time is left for application. Functionality, easy operation and suitability for all mixing capsules available on the market are important criteria for these mixing devices (see Fig. 1).

![Fig. 1: Selection of mixing capsules which can be used in the Silamat S6.](image)

1.2 Silamat S6
The Silamat S6 capsule mixer is the successor product of the time-tested Silamat S5. It is characterized by an aesthetic and functional design (Fig. 2).
Fig. 2: Silamat S6

The above-average speed of 4500 rpm and the proven figure-eight mixing pattern help to achieve homogeneous mixing results. The device is very easy to operate for dentists.

2. Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotations per minute</td>
<td>4500 rpm</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>100-240 VAC</td>
</tr>
<tr>
<td>Dimensions</td>
<td>L x W x H = 240 x 230 x 170 mm</td>
</tr>
<tr>
<td>Warranty</td>
<td>3 years</td>
</tr>
</tbody>
</table>
3. Development tests

The Silamat S6 has been comprehensively tested in the Research and Development Department of Ivoclar Vivadent regarding its suitability for all available mixing capsules.

<table>
<thead>
<tr>
<th>Product</th>
<th>Manufacturer</th>
<th>Mixing time (s)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meron AC (GIC)</td>
<td>521487</td>
<td>10</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>Ketac Fil (GIC)</td>
<td>3M ESPE</td>
<td>10</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>Ionofil Molar (GIC)</td>
<td>Voco</td>
<td>10</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>Contour (Amalgam)</td>
<td>Kerr Hawe</td>
<td>10</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>Vivacap (Amalgam)</td>
<td>Ivoclar Vivadent</td>
<td>10</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>DC-Amalgam</td>
<td>DC</td>
<td>5</td>
<td>Homogeneous mixture</td>
</tr>
<tr>
<td>Lojic DP (Amalgam) **</td>
<td>SDI</td>
<td>10</td>
<td>Capsule compatible! / Homogeneous mixture</td>
</tr>
<tr>
<td>Gutta Flow (Root canal filling)</td>
<td>Coltene Whaledent</td>
<td>15 / 30</td>
<td>Homogeneous mixture with both mixing times</td>
</tr>
</tbody>
</table>

*Table 1: Selection of tested mixing capsules with amalgam, glass ionomer cements (GIC) and a root canal filling*

The Silamat S6 prototype can also be used for the mixing capsules from Lojic Plus DP Fast Gr.I. These over dimensioned capsules could not be loaded in the Silamat S5 predecessor model.

The tests have shown that the Silamat S6 is compatible with all the investigated mixing capsules for dental use. The mentioned and officially recommended mixing times achieve homogeneous results.

4. Clinical tests

A Silamat S6 prototype was provided for the internal clinic of Ivoclar Vivadent, where the device was used to mix Ketac Fil Plus Aplicaps, Phosphacem and Vivaglass CEM. No problems or technical difficulties have been encountered so far.

Dentist Dr A. Peschke highlighted the following points:

- The operation is easy and convenient.
- The membrane-sealed keypad is clearly arranged, easy to operate and can be easily cleaned by wipe disinfection.
- The housing can be cleaned easily.
- The noise level is the same as that in other mixing devices.
- The loading and removal of capsules is easy and self-explanatory.

In general, the Silamat S6 has proven itself in the clinical practice and can be recommended, since it is handy and easy-to-operate.
5. Literature


J. Wirz, K. Jäger; *Vordosierte Amalgamkapseln* ; Quintessence **45**, 587 (1994)


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