

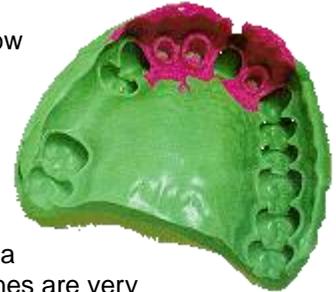
Impression Materials

[The Latest on the Impression Material Front](#)

The Latest on the Impression Material Front (Originally published in Jan 2002)

Question: Is there anything new in impression materials, either in products or how they're used?

Answer: I think that a lot of clinicians are under the impression (pun intended) that the kinds of materials we now have for making final impressions are tried and true and that manufacturers, as a whole, are not expending much effort or time in developing new products. Part of that view is correct: since the introduction of addition silicone materials (i.e., polyvinyl siloxanes), we have had a superb type of impression material that works extremely well. The addition silicones are very dimensionally stable, capture fine detail extremely well, have excellent working and setting times, and exhibit good tear strength. These are critically important factors for a final impression material. Some time-tested addition silicones include President (Coltene/Whaledent), Reprosil (Dentsply/Caulk), Express and Imprint II (3M ESPE), Correct VPS (Jeneric/Pentron), and Cinch Platinum (Parkell). Manufacturers have not rested on their laurels, though. They have been active in tweaking these well-performing products in an attempt to make them better and more user friendly. For example, within the last few years they have modified the composition of some addition silicones to improve their wettability. Because they are purported to be more hydrophilic, they tend to wet the prepared tooth or teeth better and flow around the critical marginal areas more easily. DIS has confirmed in its evaluations that several of these products are better for capturing detail in areas where absolute and total moisture control is difficult to achieve. Two of these more hydrophilic products are Aquasil (Dentsply/Caulk) and Take 1 (SDS/Kerr). Heraeus Kulzer also markets a hydrophilic product called Affinis.



Another improvement that manufacturers have made is to make the impression material's setting sensitive to intraoral temperatures. This means that the impression begins to polymerize once it is inserted in the mouth. As a result, you can use as little or as much of the material's working time to mix and place it as you choose and know that, regardless, it will set in only a couple of minutes after the tray is seated. One product with this property that DIS evaluated is Flexitime from Heraeus Kulzer. Some clinicians in our evaluation really appreciated the material's temperature-sensitive setting time.

Manufacturers have also been active in developing better ways to mix and express the addition silicones. One of the first was 3M ESPE which marketed the Pentamix (and now Pentamix 2). This device is an electrically-powered, cartridge-based machine that mixes and dispenses impression materials at the push of a button. A range of addition silicone brands are now available from the company for use in the Pentamix. Other companies have also developed mixing machines, such as the hand-held Aquasil Altus from Dentsply/Caulk and the MixStar from Zenith/DMG.

Undoubtedly, manufacturers will continue to improve these materials because they are used so frequently in dentistry. DIS, as always, will continue to keep you informed about new and innovative impression materials as they become available.

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