

Financial solutions *for* healthcare professionals

WORKING CAPITAL • CREDIT CARD • INSURANCE

LEARN MORE ▶



MENU

POWERED BY: dentalaegis

LOG IN ▶



SEARCH

Inside Dentistry

MENU



Inside Dentistry

June 2011, Volume 7, Issue 6

Published by AEGIS Communications

Identium® Vinylsiloxanether®

Obtaining a high-quality impression with a new elastomeric material.

By Christopher J. Baer, DMD

One essential skill for every restorative dentist is the ability to produce a final impression accurately and quickly. Failure to do so can result in poorly fitting restorations, increased chairtime and costly remakes; however, this skill is not easily obtained and can often lead to frustration for the dentist, staff, and even the patient. It is up to the dentist to select the best impression material to produce the desired result, while taking into consideration the clinical objectives of the case.

There has been an evolution of impression materials—from the reversible hydrocolloid in the early half of the 19th century to the polyether materials introduced in the 1960s, and most recently the vinylpolysiloxanes (VPS) in the 1970s. The hydrocolloid was known for its accuracy, but the armamentarium required was often cumbersome and took up space in the operator. Polyether impression materials were well liked because of its innate hydrophilicity, "snap-set" behavior, long working time, and good flow characteristics.^{1,2} VPS impression materials were chosen because of its easy removal from the mouth, ability to recover after the deformation that occurs during removal, and their lack of taste and odor commonly experienced with polyether materials.³

Advances in elastomeric chemistries have given birth to a new generation of impression materials: a combination of a polyvinyl and a polyether impression material, called Vinylsiloxanether® (VSXE®).⁴ It combines some of the most desired properties of both into one material. Identium®, a VSXE®, is produced by Kettenbach GmbH & Co. KG (www.kettenbach.us/dental) and combines these two chemistries to make an impression material that is extremely hydrophilic and has excellent flowability.

Flowability/Thixotropicity

When the material is syringed around a tooth, its smart thermosensitive-rheology system allows it to flow deep into the narrowest portions of the sulcus, allowing the material to capture detail below the prepared margin.⁵ While it is highly flowable, it remains where it is injected and does not drip from the teeth into the back of the patient's mouth.

Hydrophilicity

Hydrophilicity is one of the most desirable and essential properties of an impression material.⁶ Identium® impression material quickly develops its hydrophilicity and provides an accurate impression in the narrowest of spaces even in a moist sulcus and with the lowest achievable contact angle (less than 10°) after 1 second. Because the hydrophilicity is maintained throughout the entire working time of the material, it is able to produce a well-defined impression with crisp marginal details.

"Double-Snap" Behavior

The hybridization of the two types of impression materials allows for a long working time (a desired characteristic of polyethers) and a short set time (a desired characteristic of VPS). All three Identium® viscosities (medium, heavy, and light) have a total working time of 2 minutes and an intraoral setting time of 3 minutes, 30 seconds. All fast-set viscosities have a total working time of 1 minute, 15 seconds, and an intraoral setting time of 2 minutes, 15 seconds. This "double-snap" behavior occurs at the end of the working time—first there is a noticeable viscosity snap, which is followed by a cross-linkage snap that minimizes the opportunity for distortion upon removal and maximizes the accuracy of the impression. As a result of the working time kinetics, the material can be used not only for single-unit impressions but also for much larger cases involving multiple units.

Case Presentation



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

Related Articles

[CAD Scanners and Design Software](#)

[A High-Strength, Metal-Free Alternative to Traditional Denture Prostheses](#)

[Legislative](#)

[Cumulative Survival Rate of Implants Placed "Fully Guided" Using CT-Guided Surgery: A 7-Year Retrospective Study](#)

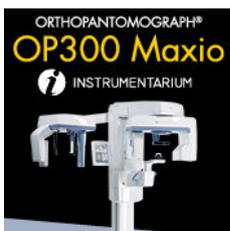
[Practice Essentials](#)



Subscriptions

SUBSCRIBE TODAY

ENAMEL PRO®





A 55-year-old patient presented to the office for treatment of tooth No. 29. He had a large existing composite with recurrent decay. The patient requested that the shade of the new restoration be matched to the crown on tooth No. 30 (Figure 1). The existing restoration and decay were removed and a core build-up was placed. The tooth was prepared for a full-coverage NobelProcera® zirconia crown (Nobel Biocare, www.nobelbiocare.com). Once the tooth was prepared, retraction cord (Ultrapak® No. 00, Ultradent Products, www.ultradent.com) was placed to displace the tissue and gain access to the margins. A single cord was used in this technique, and was left in place during the impression. To make the impression, the tooth was dried, and a non-perforated stock tray was painted with Identium® Tray Adhesive (Figure 2). Identium® Light fast-set impression material was syringed into the sulcus and covered the preparation (Figure 3). At the same time, the tray was filled using Identium® Heavy fast-set impression material. The tray was placed in the patient's mouth and held steady for 2 minutes, 15 seconds. Upon removal, the impression was inspected and sanitized (Figure 4). The impression was sent to the laboratory for pour-up and die fabrication (Figure 5), and the final restoration was delivered with minimal adjustment required (Figure 6).

Conclusion

The Identium® line of impression material is a combination of polyether and VPS impression material chemistry, resulting in a new category of impression materials—VSXE®. This new material has been optimized for the one-step impression technique or the monophasic technique. Identium® is a multi-purpose type of impression material that can be used for impressions of implants, crowns/bridges, veneers, inlays/onlays and even full or partial dentures. Using proper technique and with a multi-purpose impression material such as Identium®, it is now easier to efficiently obtain predictable, accurate, high-quality impressions in the dental practice.

Disclosure

Dr. Baer received material support from Kettenbach GmbH & Co. KG for writing this article.

References

1. Kugel G, Klettke T, Goldberg JA, et al. Investigation of a new approach to measuring contact angles for hydrophilic impression materials. *J Prosthodont.* 2007;16(2):84-92.
2. Perry RD, Goldberg JA, Benchimol J, Orfanidis J. Applicable research in practice: understanding the hydrophilic and flow property measurements impression materials. *Compend Contin Educ Dent.* 2006;27(10):582-586.
3. Mandikos M. Polyvinyl siloxane impression materials: An update on clinical use. *Aust Dent J.* 1998;43(6):428-434.
4. Stober T, Johnson GH, Schmitter M. Accuracy of the newly formulated vinyl siloxanether elastomeric impression material. *J Prosthet Dent.* 2010;103(4):228-239.
5. German MJ, Carrick TE, McCabe JF. Surface detail reproduction of elastomeric impression materials related to rheological properties. *Dent Mater.* 2008;24(7):951-956.
6. Panichuttra R, Jones RM, Goodacre C, et al. Hydrophilic poly(vinyl siloxane) impression materials: dimensional accuracy, wettability, and effect on gypsum hardness. *Int J Prosthodont.* 1991;4(3):240-248.

About the Author

Christopher J. Baer, DMD
Private Practice
Aurora, Colorado

<p>DentalAEGIS Dental Continuing Education Subscribe</p>	<p>Inside Dentistry Online CE Facebook Contest Product Specials Resource Centers Subscribe Special Issues</p>	<p>Compendium Online CE Facebook Product Specials Resource Centers Subscribe Special Issues</p>	<p>Inside Dental Technology Online CE Facebook IDT Collaboration Resource Centers Subscribe Special Issues</p>	<p>CDEWorld.com Dental Online CE Hygiene Online CE Assisting Online CE Live Events Webinars Speakers' Corner</p>	<p>Contact Us About Us Our Staff Advertisers Creative Services</p>
---	--	--	---	---	---