

# Clinical Commentary

## Kerr Take 1 – Precision impression material Highlighting features & benefits – Clinical experience.

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### Introduction

Long term success of indirect restorations depends on many factors. Precision impressions are probably the corner stone of quality final results. Well fitting indirect restorations can only be made if there are accurate models of the oral tissues. The ideal impression material should reproduce teeth free of distortion, with no voids, bubbles or tears.

Polyvinyl siloxane impression materials (addition cured silicones) were introduced in the 1970s. During the past decade these materials have gained acceptance and account for a large share of the impression material market. They reproduce the finest detail and offer the best elastic recovery of all commercially available impression materials. Currently, addition cured silicone impression material is the preferred material of choice for most crown and bridge impressions.

Polyvinyl siloxane possesses remarkable dimensional stability, and is odourless, tasteless and pleasant for the patient. Polyvinyl siloxanes are used in fixed prosthodontic, operative dentistry, removable prosthodontics and implant dentistry. With proper material selection and manipulation, accurate impressions can be obtained for the fabrication of tooth and implant supported restorations.

Addition reaction silicones are currently the most popular category of impression material. They are available in different viscosities and can be used with several techniques. Take 1<sup>®</sup> currently sets the standard for definitive impression materials during fixed prosthodontic application.

In order to be useful an impression material must fulfil specific physical requirements. **Take 1<sup>®</sup>** demonstrates **optimal physical properties**, unsurpassed **dimensional stability** for **improved accuracy** and **excellent tear strength** allowing removal from a gingival sulcus without tearing.



**Fig.1 This photo depicts the exceptionally low contact angle of the water bead on the Wash (Light Bodied) material, which shows the hydrophilic properties of Take 1<sup>®</sup>.**

A lower contact angle means greater “wettability”, displacing oral fluids for a more detailed impression. To improve hydrophilic properties Take 1<sup>®</sup> combines its proven surfactant with a **patented hydrophilic monomer**, the result is a truly **low contact angle**. This proprietary additive provides an excellent surface energy within the material, and therefore unsurpassed detailed reproductions, even in the presence of moderate blood and saliva. **Beautiful marginal reproduction leads to an accurate result with every impression.**

The completion of an accurate impression following adequate tooth preparation design incorporating smooth and precise finish lines is a critical step in the long-term success of

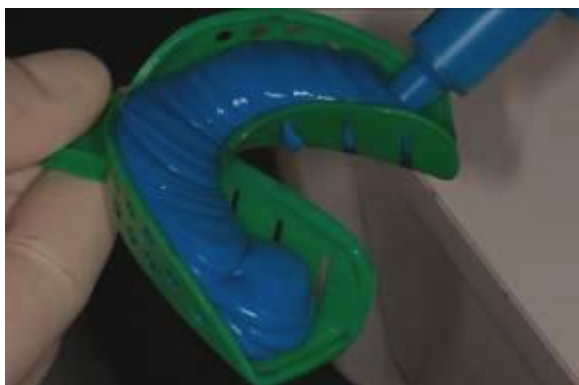
any restorative procedure. Precise impressions will communicate detailed and complete marginal detail and ultimately improve the fit of the restoration. The use of high-quality impression materials like Take 1<sup>®</sup> will provide dimensional stability and accuracy.



**Fig. 2 Take 1<sup>®</sup> Unidose<sup>®</sup> syringe with intra oral tip for precision delivery of the fast set Wash (Light Bodied) material. Each syringe contains enough Wash (Light Bodied) material for 1 to 3 units.**

An automatic mixing delivery system (bulk or single dose) has simplified the manipulation of polyvinyl siloxane impression materials by simplifying manipulation and reducing voids in impressions.

The **Kerr Volume<sup>™</sup> Mixer**, specifically designed for **easy extrusion of higher viscosity impression materials**, is the **fastest**, easiest to use automated mixing system available. Its precision engineered hydraulic system delivers a reliable, **consistent mix** each and every time, and its sleek design easily integrates into any dental office. It allows for quick activation of material and is **simple and easy to use**. **Take 1<sup>®</sup>** is available in **four viscosities** and **three set times** so no matter what your preference of viscosity, technique or impression tray, Take 1<sup>®</sup> has an option for you.



**Fig. 3 Loading the custom tray with the Kerr Volume<sup>™</sup> Mixer.**

## Material selection

Tolerance to moisture, wetting ability, and flow characteristics significantly impact the material's ability to accurately record surface detail. To obtain void free impressions it is necessary for the material to fully wet the teeth and soft tissues.

**Take 1<sup>®</sup>** is actually a **blend of 5 vinyls and a bimodal filler system**. In addition to Take 1<sup>®</sup>'s surfactant, Kerr also included a **patented hydrophilic additive**. This unique, proprietary formulation results in a **material that works consistently and easily in virtually any oral environment**. The new generation of hydrophilic addition silicones like Take 1<sup>®</sup>, ensure the patient's comfort and meets all practical clinical requirements (e.g., flows easily without splashing, **unique Unidose<sup>®</sup> delivery system** providing **accurate mix** of material, **bright easy to read colours**).



**Fig. 4 Take 1<sup>®</sup> flows easily without splashing.**



**Fig. 5 Take 1<sup>®</sup> Wash (Light Bodied) and Rigid Tray (Heavy Bodied) material offer bright and easy to read colours.**

Take 1<sup>®</sup> is available in a wide variety of viscosities and rigidities, ranging from very low (Wash or Light Bodied) to medium (Monophase or Medium Bodied), high (Tray

or Heavy Bodied) and very high (Rigid Tray and Putty).

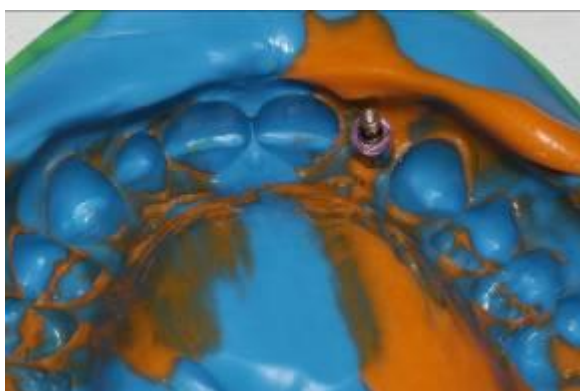
High viscosity Tray (Heavy Bodied) material and Wash (Light Bodied) are a perfect combination for the one-step dual viscosity technique.



**Fig. 6** Intra oral direct delivery of the fast set Wash (Light Bodied) material for an implant impression.



**Fig. 7** Take 1<sup>®</sup> Tray (Heavy Bodied) material in a stock tray coated with adhesive for the one step dual viscosity technique.



**Fig. 8** Accurate impressions can be obtained for the fabrication of tooth and implant supported restorations

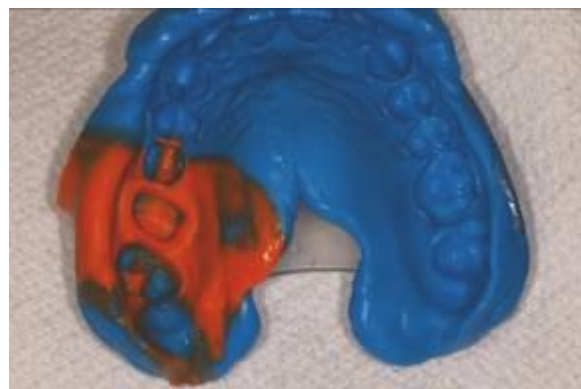


**Fig. 9** Well fitting indirect restorations can only be made if there is an accurate model detailing all oral tissues.

### **Impression tray selection**

Earlier types of impression materials required custom or spaced trays to ensure uniform thickness of material.

The improved physical properties of Take 1<sup>®</sup> have diminished the need for custom and spaced trays unless unusual anatomical variations exist. The use of rigid stock trays that resist deformation but fully support the impression material, and/or coated with an appropriate tray adhesive, are more than acceptable.



**Fig.10** Stock tray coated with adhesive for the one step dual viscosity technique impression of a single crown.

### **Dual-arch impression tray**

When one or two posterior teeth are prepared for indirect restorations, it is often advantageous to use a dual-arch impression technique.

In my opinion, dual arch impression taking offers many advantages when compared with conventional impression taking techniques. For example, three step conventional impression taking (two separate impressions plus an occlusal registration) requires considerable chair time and materials.

Clinicians should select a dual-arch impression tray that passively fits the desired quadrant. The tray should not impinge on any anatomical structure. The tray should not interfere in any way with the occlusion. The dentist must inject a low viscosity (Take 1<sup>®</sup> Wash - Light Bodied material) around the prepared tooth. Medium (Take 1<sup>®</sup> Medium/Monophase) or high viscosity (Take 1<sup>®</sup> Tray - Heavy Bodied) impression materials is then inserted on both sides of the tray. The patient is then instructed to close to their maximum intercuspation.

### Soft tissue management

Adequate gingival health is a prerequisite for predictable impressions. Furthermore, proper retraction of the gingival tissues away from the margins is often necessary for obtaining an accurate impression. Mechanical displacement of the gingival tissue is usually obtained with a double retraction cord technique. A small size cord should be selected for the first layer and gently placed subgingivally. A larger second cord is then packed into the sulcus. The first cord remains in place throughout the impression procedure. This will result in thicker material margins that will be less susceptible to distortion upon removal of the impression.



**Fig. 11** Mechanical displacement of the gingival tissue is usually obtained with the retraction cord technique.



**Fig. 12** Take 1<sup>®</sup> does not slump or pull away during placement. It stays precisely where you place it in your patient's mouth.



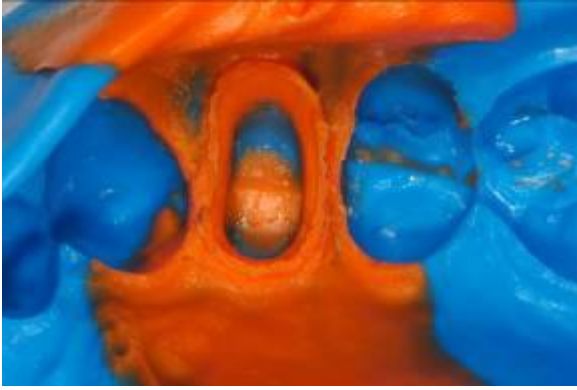
**Fig. 13** Take 1<sup>®</sup> Wash (Light Bodied) and Tray (Heavy Bodied) material in a stock tray coated with adhesive for the single arch one step dual viscosity technique.

Take 1<sup>®</sup> impression material is stable because there is no volatile by-product affecting its chemical reaction. It does not give off or absorb water. This dimensional stability permits pouring of the impression at the operator's convenience.

Take 1<sup>®</sup> does not slump or pull away during placement. It stays precisely where you want it whether that's in your patient's mouth or in the tray ensuring a more accurate impression leading to a precise first time fit.



**Fig. 14.** The use of rigid stock trays that resist deformation and support the impression material, coated with the appropriate tray adhesive, is acceptable.



**Fig 15. Excellent tear strength allowing removal from the gingival sulcus without tearing.**

## **Conclusion**

Indirect restorations depend on an accurate impression in order to achieve clinical success. The use of reliable impression materials is critical to ensure accurate data. Take 1<sup>®</sup> polyvinyl siloxane material fulfils the complete range of your impression needs, from single-unit crowns to multiple-unit cases.

When combining experience, attention to detail and a quality impression material, it is possible to achieve a great fit without adjustment and this can only improve our goals when practicing aesthetic dentistry.