

# 3M™ ESPE™ Astringent Retraction Paste

**NEW**  
Suited for polyether, VPS  
and digital impressions!



## Technical Data Sheet

**3M** ESPE

# 1 Retraction made easy by the 3M™ ESPE™ Astringent Retraction Paste

For more than 45 years, 3M ESPE has been pointing the way in the field of dental impression. Whether with the invention of Impregum™ Polyether Impression Material or the recent digital “3D in Motion” technology – today’s impressing work can’t be imagined without innovations by 3M ESPE. Now the innovative retraction paste sets another milestone: it is a simple and effective means of gingival retraction. Because of the capsule’s fine tip, the astringent retraction paste can easily be inserted right where it belongs – deep directly into the sulcus.

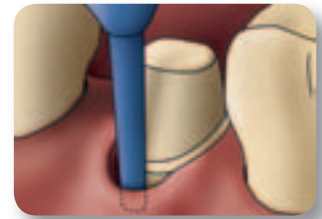


Fig. 1: Retraction capsule tip inserted into the sulcus.

## 1.1 Product description

3M ESPE Astringent Retraction Paste delivers a retraction paste that contains 15 % aluminum chloride. The paste is placed directly into the sulcus via a highly innovative, easy to use, hygienic unit-dose capsule. The capsules are compatible with most composite dispensers.

## 1.2 Indications

3M ESPE Astringent Retraction Paste is indicated for the temporary retraction of the marginal gingiva to provide a dry sulcus when the periodontium is healthy, such as:

- Taking impressions (material based or digital)
- Preparation of temporary casts
- Preparation of class II and V fillings



Fig. 2: *In-vivo* application of the 3M™ ESPE™ Astringent Retraction Paste.

The product must not be used in patients suffering from a diseased periodontium, open furcations, exposed bone.

## 1.3 Product features and benefits

### General advantages:

- Enables a clean, dry sulcus and a long-lasting robust hemostasis
- Effectively opens the sulcus

### Versus cords:

- Easy and time-saving retraction process: 50 % faster
- Lower risk of bleeding/hemorrhage after removal
- Gentle on tissue for increased patient comfort



Fig. 3: No dedicated dispenser needed: 3M™ ESPE™ Astringent Retraction Paste fits with most composite dispensers

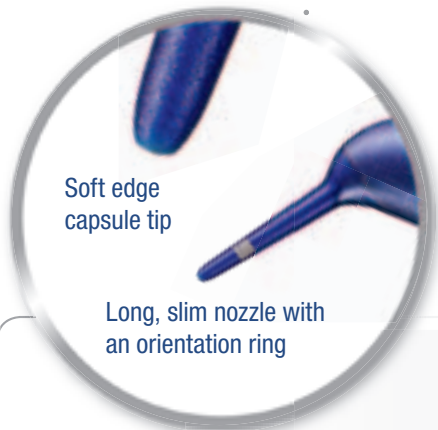
### Versus competing pastes:

- Easier application into the sulcus and better interproximal access due to capsule’s fine tip
- More hygienic application, avoiding problems caused by cross-contamination (unit-dose)
- Application with common composite dispensers

# 3M™ ESPE™

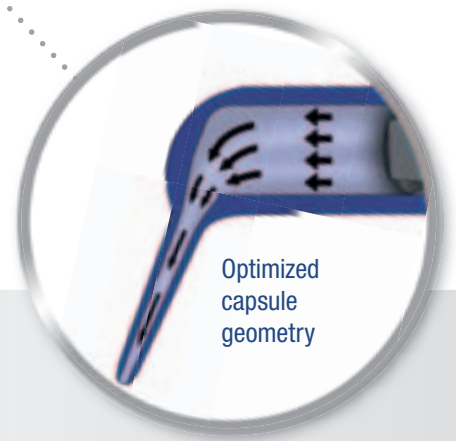
## Astringent Retraction Paste

**Easy sulcus access and opening**

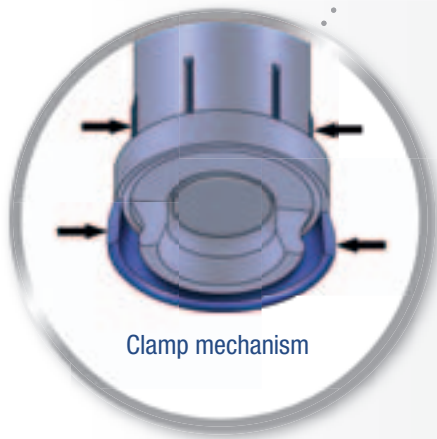


The orientation ring corresponds in size and position to the perio probe. It is a feature for more precise and easy intra-oral handling.

**Easy extrusion of highly viscous paste**



**Hygienic and clean unit-dose capsule**



**Secure fixation in common capsule dispensers**

## 2 Clinical Performance

### 2.1 Gingiva retraction – the prerequisite for successful precision impressions

Gingiva retraction plays an important role in accurate impressions: normally, the margin of preparation is not accessible for impression material when located para- or subgingivally and the sulcus may be filled with saliva, blood or other fluids after tooth preparation. Therefore, effective retraction is needed to create a space around the preparation, and a clean and dry sulcus area.

### 2.2 Key results of field testing

In 2010 and 2011 over 260 dentists worldwide evaluated the paste and contributed to perfecting its features. The 3M™ ESPE™ Astringent Retraction Paste satisfies dentists' needs in respect of the relevant attributes:

**86%** of dentists were satisfied or very satisfied

**74%** of dentists were satisfied or very satisfied with gingiva retraction /sulcus opening

**93%** of dentists were satisfied or very satisfied with the hemostasis

**84%** of dentists would recommend 3M ESPE Astringent Retraction Paste to their colleagues

### 2.3 Also great for digital impressions

3M ESPE Astringent Retraction Paste was designed to also meet the special needs of digital impression taking.

A survey in Western Europe with customers (n=13) using a digital impression system (Lava™ C.O.S. from 3M ESPE) confirmed the suitability of 3M ESPE Astringent Retraction Paste for retraction prior to the digital impression:

**92%** stated that 3M ESPE Astringent Retraction Paste is a very suitable product for gingival retraction

**100%** stated that 3M ESPE Astringent Retraction Paste has very good hemostatic properties

**85%** stated that 3M ESPE Astringent Retraction Paste is well suited to place the retraction paste into the sulcus

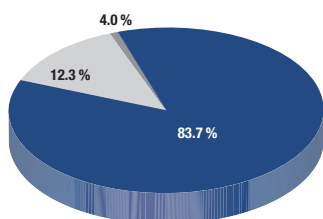
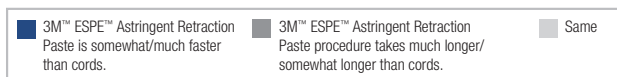
**77%** stated that 3M ESPE Astringent Retraction Paste makes the retraction process more efficient

**92%** would recommend 3M ESPE Astringent Retraction Paste to their colleagues

# 3 Advantages of 3M™ ESPE™ Astringent Retraction Paste

## 3.1 Advantages vs. cords

**84% of dentists stated using 3M ESPE Astringent Retraction Paste is faster than using retraction cords**

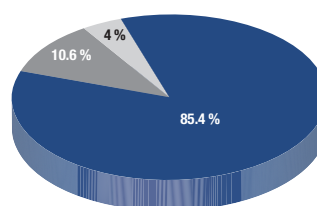
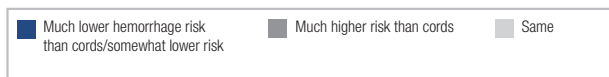


**50% faster on average than cords**

**Fig. 4: Time needed to use 3M™ ESPE™ Astringent Retraction Paste**

Source: Field test with dentists worldwide in 2010 and 2011, N = 227

**85% of dentists stated the risk of post hemorrhage after using 3M ESPE Astringent Retraction Paste is lower than using retraction cords**



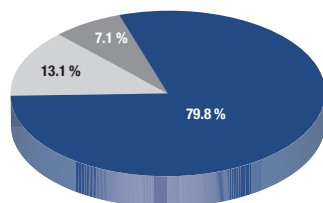
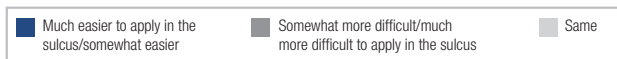
**Fig. 5: Risk of post hemorrhage**

Source: Field test with dentists worldwide in 2010 and 2011, N = 227

**Summary:** 3M ESPE Astringent Retraction Paste is faster and more convenient than cords, with lower risk of post hemorrhage.

## 3.2 Advantages vs. competing pastes

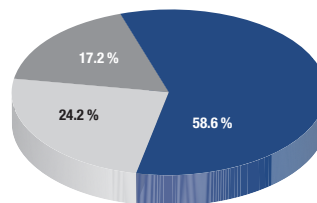
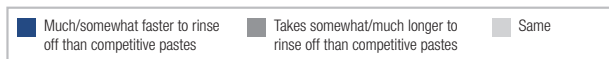
**80% of dentists stated the paste application with 3M ESPE Astringent Retraction Paste is easier than with competitive retraction pastes**



**Fig. 6: Ease of application into the sulcus**

Source: Field test with dentists worldwide in 2010 and 2011, N = 99, paste users

**59% of dentists stated the removal of 3M ESPE Astringent Retraction Paste is faster than of competitive retraction pastes**



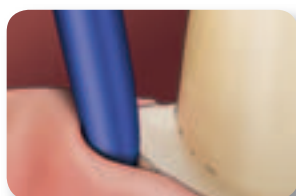
**Faster by 29%**

**Fig. 7: Time needed to rinse of 3M™ ESPE™ Astringent Retraction Paste**

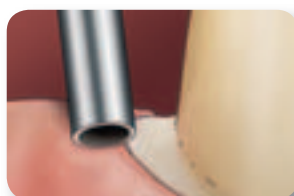
Source: Field test with dentists worldwide in 2010 and 2011, N = 99, paste users

**Summary:** 3M ESPE Astringent Retraction Paste is easier to apply and overall more convenient to use. It is also faster to remove than other retraction pastes.

Due to its patented tip geometry with a smaller diameter, the capsule of 3M ESPE Astringent Retraction Paste allows to actively open the sulcus and enables easy access even to tight interproximal areas. In sum, this delivery system offers easier application INTO the sulcus and better interproximal access than other pastes.



**Fig. 8: Tip of 3M™ ESPE™ Astringent Retraction Paste can be easily inserted into the sulcus and ensures easy application of the paste.**



**Fig. 9: Competitive retraction pastes show much thicker tips.**



**Fig. 10: Optimized tip geometry of 3M™ ESPE™ Astringent Retraction Paste.**

# 4 Scientific Data

## 4.1 Retraction pastes vs. cords: effect on gingival health

A recent study investigated the effect of retraction materials on gingival health, and in particular the injury of the gingival sulcular epithelium. The commonly used impregnated retraction cords require proper tissue manipulation and are technique-sensitive. Retraction pastes were found to be better than cords: as assessed histologically, they respect the periodontium.<sup>1</sup> Improper handling of cords may lead to gingival recession and marginal exposure of the prosthesis, which severely affects esthetics. Moreover, the retraction procedure is inconvenient, time-consuming and uncomfortable for the patient. The study confirmed that teeth that had received medicated cords exhibited significant gingival recession after operation, while cordless types showed no significant findings.<sup>2</sup>

In another study, it was shown that the use of cords as well as the use of paste (Expasyl™) caused a temporary gingival inflammation, which was greatest with Expasyl™. All the cases of inflammation recovered. Pastes did not induce bleeding during or after retraction.<sup>3</sup>

## 4.2 Influence of 3M™ ESPE™ Astringent Retraction Paste on bond strength of self-adhesive cements

It is well known that residual astringents on the prepared tooth have a negative influence on the bond strength of bondings or cements when cementing final restorations.<sup>4</sup> In an *in-vitro* study, the effect of Expasyl™ and 3M ESPE Astringent Retraction Paste on the bond strength of two self-adhesive cements, RelyX™ Unicem Clicker™ and Maxcem Elite™, on human superficial dentin was investigated. The bond strength of RelyX Unicem Clicker the cement decreased when retraction paste was used; the decrease with Expasyl™ was significantly greater than with 3M ESPE Astringent Retraction Paste. The bond strength of the cement Maxcem Elite™ improved somewhat when placed on dentin that had been exposed to 3M ESPE Astringent Retraction Paste, in both the rinsed and unrinsed conditions.<sup>5</sup>

## 4.3 Rinse time of 3M ESPE Astringent Retraction Paste

In another study, it was shown that the Astringent Retraction Paste from 3M ESPE was easier to rinse off than Expasyl™ and Expasyl™ Premium. The authors state that "... this may influence subsequent procedural steps by reducing contamination ...".<sup>6</sup>

**Summary:** Retraction pastes may lead to less gingival recession and effectively stop bleeding during or after retraction. The innovative 3M ESPE Astringent Retraction Paste can be easily rinsed off.



<sup>1</sup> S. Phatale, P.P. Marwar, G. Byakod, S. B. Lagdive, J. V. Kalburge, Effect of retraction on gingival health: A histopathological study, J Ind Soc Periodontology 2011 14(1): 35-39

<sup>2</sup> C.-T. Lin, S.-Y. Lee, Y. Jen-Chang, C. May-Show, W. Joan- Yvette, Cordless method of gingival sulcus management: clinical trial, IADR 2005 #3046

<sup>3</sup> K.Q. Al Hamad, W. Z. Azar, H.A. Alwaeli, K.N. Said, A clinical study on the effects of cordless and conventional retraction techniques on the gingival and periodontal health, J Clin Periodontal 2008 35: 1053-1058.

<sup>4</sup> K.L. O'Keefe, L.M. Pinzon, Rivera B, J.M. Powers, Bond strength of composite to astringent-contaminated dentin using self-etching adhesives, Am J Dent 2005 18(3):168-72

<sup>5</sup> R.A. Yapp, and J.M. Powers, Effect of Retraction Pastes on Bond Strength of Self-adhesive Cements, IADR 2011 #1889

<sup>6</sup> C. Decoteau, M. Oględzki, S. Sorousian, and R.D. Perry, Rinse Time of Hemostatic Retraction Pastes, IADR 2011 #1025

# 5 How to use 3M™ ESPE™ Astringent Retraction Paste

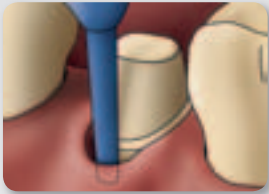
Step by step to a clean and dry working field

1



The 3M ESPE Astringent Retraction Paste capsule fits most composite dispensers. Extrude a small amount of paste and discard.

2



Insert retraction capsule tip into the sulcus. The tissue is mechanically retracted.

3



Slowly and steadily, inject astringent retraction paste into sulcus. Completely fill the sulcus.

4



#### **OPTIONAL: PROCEDURE WITH CORDS**

For greater gingival deflection, the astringent retraction paste can be used in combination with retraction cords.

5



Leave astringent retraction paste on for a minimum of 2 minutes.

6



Completely remove astringent retraction paste with air-water spray and suction.



**For detailed clinical application please watch our video.**  
Get the free mobile app for your phone at <http://gettag.mobi>



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XX (03.2012)