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### **RelyX Unicem (Project 02-33) (05/03)**

3M ESPE has developed a new self-adhesive universal resin cement, RelyX Unicem. The cement is formulated to be self-adherent - eliminating the potential need for a separate etching, priming or bonding step and purportedly reducing patient sensitivity. The dual-curing cement is dispensed from convenient unit-dose capsules with excess product claimed to be easy to remove clinically. Completely new monomer, filler and initiator technologies were reportedly created. Unicem contains phosphoralated methacrylates, which the company claims can generate self-adhesion. Unicem monomers contain at least two phosphoric acid groups and a minimum of two double-bonded carbon units per molecule, providing potentially high reactivity and cross-linking. The acidic monomers are reportedly neutralized with alkaline-filler molecules rather than soluble-fluoride salts leading to a purported pH increase and fluoride-ion release. The percentage of inorganic fillers is said to be approximately 72% by weight while the particle size is less than 9.5 microns. The setting reaction involves basic radical polymerization with either visible-light or oxidation-reduction self-cure mechanisms. Combining the advantages of both conventional-luting cements and resin cements, the company reports excellent adhesion, physical strengths, low linear expansion and superior marginal integrity. The cement is designed for all types of porcelain, composite, metal and metal-ceramic restorations and is available in five shades.



#### **Manufacturer:**

3M Dental Products Division  
3M Center, Bldg 275-2SE-03  
St. Paul, MN 55144-1000  
(800) 237-1650  
(612) 733-8524  
(800) 888-3132 FAX  
[www.3MESPE.com](http://www.3MESPE.com)

#### **Suggested Retail Price:**

\$99.00 RelyX Unicem Universal Resin Cement Trial Pack (item number 56829) contains:  
-20 Aplicap capsules assorted:  
-10 of A2 Universal  
-5 of Translucent  
-5 of A3 Opaque  
-Activator/Applier

#### **Government Price:**

\$62.40 RelyX Unicem Universal Resin Cement Trial Pack (item number and contents as listed above)

#### **ADVANTAGES:**

- + No bonding agent is necessary.
- + Cement is very easy to mix.
- + Working time is long enough to allow users to mix and use the cement without hurrying.
- + Setting time is appropriate.
- + Easy to clean excess cement from margins.
- + No post-treatment sensitivity reported during clinical-user evaluation.
- + Price is comparable to other resin cements.

- + Expiration dates and lot numbers are provided on individual foil pouches.
- + Well-done graphics instruction cards.
- + Recommended storage conditions are listed on box.
- + Highest degree of radiopacity of tested cements.

**DISADVANTAGES:**

- Kit does not contain all components (e.g., ceramic primer, try-in pastes) necessary for cementation of all-ceramic restorations.
- Material Safety Data Sheet (MSDS) not included in kit.
- Only one viscosity.
- Relatively low bond strength to dentin.
- No long-term clinical data.

**SUMMARY AND CONCLUSION:**

Rely X Unicem performed well in the laboratory and was well liked by clinical evaluators. It had an acceptable film thickness, appropriate working and setting times, and was adequately radiopaque. Clinical evaluators found it easy to mix and clean-up from marginal areas. Unicem comes with well-illustrated instruction cards that the evaluators appreciated and found useful. The most highly rated characteristic of this product is the fact that it was easy to mix and place with no separate bonding steps typically found with resin cements. However, the kit lacks necessary components for the cementation of all-ceramic restorations. **RelyX Unicem** self-adhesive universal resin cement is rated **Acceptable** for use by the federal dental services.