



Manufactured in U.S.A. by:

SCI-PHARM



Sci-Pharm Catalog No. 50-04
Anterior/Posterior Restorative,
Paste/Paste Type

TECHNICAL BULLETIN Instructions

Anterior/Posterior Composite Restorative, Paste/Paste Type with Bonding Agent

A Self-Cure Radio-Opaque Resin-Based Dental Restorative Material

Recommended for use in Class III, IV and V restorations and for limited use in posterior occlusal restorations where esthetics are of primary importance.

CONTENTS:

- Cat. No. 50-041 Restorative Paste, Part A, 14g
- Cat. No. 50-042 Restorative Paste, Part B, 14g
- Cat. No. 50-013 Enamel Conditioner, 13cc
- Cat. No. 50-043 Bonding Agent, Part A, 3g
- Cat. No. 50-044 Bonding Agent, Part B, 3g
- Accessories & Instructions



Cat. No. 50-04



OUTSTANDING FEATURES OF THE MATERIAL

- High filler content
- High mechanical strength
- High wear resistance
- Long shelf-life
- Excellent marginal adaptation
- Low shrinkage
- Low pulp irritation potential
- Excellent X-ray opacity
- Good polishability
- Resistance to staining
- Excellent aesthetics
- Bonds to enamel

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CAUTION

Federal law restricts this device to sale
by or on the order of a dentist.

GENERAL INFORMATION

Among the different forms of self-cured composite restorative materials, the paste/paste type is the most popular because of its ease of handling and uniformity of mix consistencies. The paste/paste type materials are, however, known to have two major limitations:

1. They need to be stored under refrigeration.
2. Their use is usually limited to "non-bonding" type restorations where the geometry of the cavity provides conditions for mechanical retention.

Scientific Pharmaceuticals has developed a restorative that overcomes these limitations. Our material may be stored under room temperature, not exceeding 73°F (23°C), for eighteen months.

The bonding agent included in the kit contributes to improved marginal adaptation through bonding to conditioned (etched) enamel. It also allows so-called "adhesive restorations"; for example, Class IV incisal edge restorations, where retention is based on bonding to etched enamel. It may also be used for thinning the pastes, if desired for a particular application, without affecting the setting characteristics.

However, the most important advantage of the Sci-Pharm restorative results from its remarkable set of physical properties. Its high filler content contributes greatly to reduced shrinkage, low water sorption, increased mechanical strength and hardness and improved wear resistance. The proprietary resin blend used in the Sci-Pharm restorative constitutes another important factor in achieving true and long-awaited progress in the properties of composite restoratives.

Until now, composite restoratives were limited in their use almost exclusively to anterior restorations. Their high polymerization shrinkage and, most importantly, inadequate wear resistance virtually precluded their use in posterior restorations. However, because of its advanced set of properties, the Sci-Pharm restorative can be judiciously used for these purposes.

PROPERTIES OF CURED RESTORATIVE

<u>PROPERTY</u>	<u>REQUIREMENTS OF AMERICAN DENTAL ASSOCIATION REVISED SPECIFICATION NO. 27*</u>	<u>SCI-PHARM COMPOSITE</u>
Flexural Strength	50 MPa	120 MPa
Compressive Strength	Not Specified	275 MPa
Hardness (Barcol)	Not Specified	>80
Coefficient of Thermal Expansion	Not Specified	$31 \times 10^{-6} \text{cm}^{\circ}\text{C}$
Opacity/Translucency Factor (C^{70})	.35-.55	.40
pH	Not Specified	Neutral
Water Absorption	50 $\mu\text{g}/\text{mm}^3$	13 $\mu\text{g}/\text{mm}^3$
X-ray Opacity	> twice the x-ray opacity of aluminum	Complies
Color Stability	Discoloration perceptible with difficulty	Complies
Working Time at 23°C (73°F)	Min. 90 seconds	Min. 100 seconds
Setting Time 37°C (98.6°F)	Not more than 5 minutes	Max. 2.5 minutes

***NOTE:** ADA Specification No. 27 specifies minimum requirements for all resin-based filling materials, however, it does not address their application for occlusal restorations.

Additional Technical Information Required by the ADA Revised Specification No. 27

1. Principle organic component of material: Bis-GMA and polyglycol dimethacrylate resin blend
2. Particle sizes of inorganic filler: 100% below 30 microns, 90% below 10 microns, 50% below 2 microns
3. Volume % of Filler in the Restorative Material: 63%

CLINICAL PROCEDURES

Cavities are prepared in the conventional manner. In case of direct pulp exposure, the use of calcium hydroxide-type base is indicated. If pulp is not exposed, but the thickness of remaining dentin is less than 1mm, the use of a light-cure cavity liner, such as Sci-Pharm's *Fluoroseal*® (Catalog No. 75-03), is strongly recommended. In all other cases, the application of composite compatible dentin sealer over the exposed dentin surfaces, such as Sci-Pharm's *Universal Cavity Varnish* (Catalog No. 70-03), will alleviate post-operative sensitivity. Best marginal adaptation is achieved by etching the enamel surrounding the cavity and applying bonding agent prior to inserting the restorative into the cavity.

SPECIAL RECOMMENDATIONS

Class I - Slightly overfill the cavity. Place plastic strip over the restoration and instruct the patient to bite down for one minute. Remove excess restorative and trim the flash. The restoration will be ready to finish five minutes after inserting the paste into the cavity.

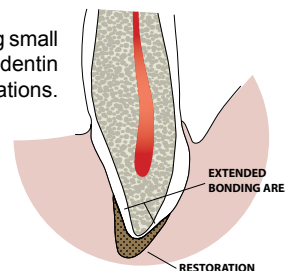
Class III - The use of a plastic strip is recommended for interproximal separation and as a matrix. Compress the restorative in the cavity with the strip. Hold the strip for three minutes until the restorative sets. Trim and finish after five minutes.

Class IV - Incisal edge restorations may be prepared with or without the use of crown forms. The use of bonding agent over etched enamel is a necessary step in this kind of restoration. To provide adequate bonding strength, a relatively large area of enamel should be etched and primed with bonding agent. For this reason butt joints are generally not recommended. Greatly improved retention is achieved by extending the bonding area 2-3mm around the fracture (see illustration).

Retention may also be increased by beveling or tapering the adjacent enamel, or by making small undercuts on the lingual side of the tooth. In some situations the use of pins placed in the dentin may be necessary. The use of crown forms is especially recommended in larger restorations. The crown form should be removed no sooner than five minutes after it is seated.

A typical Class IV restoration procedure consists of the following steps:

1. Prophylaxis of the tooth (or teeth) to be restored, followed, if necessary, by operational preparation of the enamel for better crown form acceptance.
2. Prefitting of the crown form.
3. Application of enamel conditioner to the area to be bonded, followed in two minutes by washing and drying.
4. Preparation of the bonding agent mix and application to the etched enamel.
5. Preparing the restorative mix and filling the crown form.
6. Seating the crown form on the tooth.
7. After at least five minutes, cutting and removing crown form.
8. Finishing.



Class V - After conventional cavity preparation, fill the cavity with restorative paste and place the cervical matrix. After four minutes, remove the matrix. Trim and finish after five minutes.

MIXING AND APPLICATION INSTRUCTIONS

Enamel Conditioner - Using a cotton pledget, apply enamel conditioner to enamel and wait 30-45 seconds. Rinse conditioner and evacuate. Dry with oil-free air or with any commercial dental drying agent.

CAUTION: Avoid contact with soft tissue or dentin. If accidental spill occurs, wash immediately.

After drying, the properly conditioned (etched) area should have a chalky-white appearance. Highly mineralized teeth may require an additional two minute etching to obtain this effect.

Bonding Agent - Dispense an equal number of drops of Part A and Part B liquids into a mixing well. Mix for five seconds with a disposable brush and apply a thin layer over the dry, etched enamel. After 90 seconds, the

