



Manufactured in U.S.A. by:

**SCI-PHARM**



**CuRAY-Support<sup>®</sup>,**  
Core Build-up Material  
Dual-Cure

**TECHNICAL BULLETIN**  
Instructions



A dual-cure restorative for use in the build-up of teeth lacking sufficient coronal structure prior to placement of crowns or bridges and for cementing pins and posts.

**Kit Contents:**

- Cat. No. 55-301: Restorative, Contrast, 5g x 2
- Cat. No. 55-302: Restorative, Natural, 5g x 2
- Cat. No. 55-303: Self-Cure Activator, Liquid, 6g
- Cat. No. 55-304: Self-Cure Activator, Paste, 4g
- Cat. No. 55-305: Fluoroseal<sup>®</sup> Cavity Liner, 7g
- Accessories & Instructions

**Custom CuRAY-Support<sup>®</sup> Kits Available:**

- Cat. No. 55-31: All Contrast Shade Kit
- Cat. No. 55-32: All Natural Shade Kit

Cat. No. 55-30



**OUTSTANDING FEATURES**  
OF THE MATERIAL

- When mixed with self-cure activator, the restorative sets fully, irrespective of the thickness of the restoration.
- The restorative cures with light induced curing mechanism, without necessity of mixing.
- Virtually unlimited working time in light-cure mode; conveniently long working time in self (chemically) cured mode.
- Two shades: one contrasting for ease of distinguishing from tooth structure; the other natural for use under semi-transparent restorations.
- Well balanced x-ray opacity permits easy distinguishing from tooth structure as well as from pins and posts.
- Moldable, non-sticky, yet adhesive consistency of the restorative paste.
- Allows control of consistency, wherever desirable, by adding either liquid or paste self-cure activator.
- Suitable for cementing posts.
- Offers substantial chair-time savings.

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**CAUTION**

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

## GENERAL INFORMATION

The use of core build-up materials in dentistry for replacing missing coronal structure is widespread, and the demand for these types of materials is rising with the increase of the median age of the population. Until recently, materials used for core build-up were virtually the same as filling restoratives. Often, dentists used conventional filling restoratives in lieu of specialized core materials. Currently, composite (resin-based) materials are the most frequently used core restoratives. They offer the advantages of superior mechanical strength and ease of handling over alternative materials. Composite core restoratives are available in either natural (tooth) or contrast shades: the tooth shade is indicated for anterior teeth and under semi-transparent ceramics; the contrast shade provides ease in distinguishing the restorative from the tooth structure. Composite materials are available in either self- or light-cure versions, each offering specific advantages but also imposing some limitations. Self-cure materials provide unlimited depth of cure and may be used in places where light of sufficient intensity might not penetrate. Light-cure materials offer convenience of handling and virtually unlimited working time. Also, they are less sensitive to storage conditions so they do not require refrigeration and have a much longer shelf-life.

Sci-Pharm's *CuRAY-Support*® is a new type of core material, combining the main advantages of both light- and self-cure systems. This material allows the clinician to select, according to his preference, either the light- or self-cure mode. While the light-cure mode may be preferred in the majority of cases because of the simplicity of the one component system and convenience of working without time pressure, the self-cure mode will allow the use of the restorative in areas inaccessible to light, to make large restorations without the necessity of curing in layers, and to cement posts. Also, a self-cure system allows for the preparation of lighter consistency mixes which are suitable for placement in areas requiring greater flowability of the material.

*CuRAY-Support*® differs significantly from conventional restoratives as it was optimized to meet specific requirements and provide features most desirable for core build-up materials. This includes well balanced x-ray opacity, outstanding depth of cure, extended working time and ease of contouring. All pertinent characteristics of the cured material meet or exceed the requirements of the American Dental Association Specification No. 27 for composite restoratives.

COMPARISON OF PROPERTIES OF CURED <i>CuRAY-SUPPORT</i> ® WITH GLASS IONOMER CEMENTS		
Property	<i>CuRAY-Support</i> ®	Glass Ionomer
Compressive Strength	over 30,000 ps (207 MPa)	14,500 - 27,500 psi (100 - 190 MPa)
Diametral Tensile Strength	6,000 psi (41.4 MPa)	1,300 -2,170 psi (9 - 15 MPa)
Water Solubility	virtually insoluble	0.1 - 2.0%*
Working Time at 23°C in self-cure mode	140 seconds	120 - 240 seconds*
Setting Time at 23°C in self-cure mode	5 minutes	7 - 15 minutes*

\*Depending on brand and variations in powder/liquid ratios and techniques of application.

## GENERAL INSTRUCTIONS FOR USE AND APPLICATION TECHNIQUES

*CuRay-Support*® may be used with or without pins and posts. The restorative may be applied directly onto the prepared tooth, using plastic or metal instruments, or by using transparent crown forms.

When the thickness of the restoration is less than 3mm, or when the restorative is applied in layers, the light curable paste may be used alone, i.e., without mixing with the liquid or paste self-cure activator. Cure may be accomplished with any dental curing light operating in a visible wavelength range. Depending on the desired depth of cure and light intensity, the necessary curing time may vary from 20 to 60 seconds. The tip of the light should be placed as close to the restoration as possible and moved slowly around its periphery and over its top.

For curing in layers over 3mm, for cementing posts, or in situations where a thinner consistency of the material is desired, the paste should be mixed with the liquid or paste self-cure activator. The addition of activator will result in triggering the self-cure mechanism while not interfering with the ability of the material to cure by light. The clinician has the convenience of choice between the liquid and paste activator. The liquid form is preferred for cementing posts and where the use of a low viscosity material is indicated. The paste activator is generally preferred in situations where the cure of a large bulk of the material is involved. This allows the dentist to take advantage of the self-cure feature of *CuRay-Support*® while preserving its moldable consistency.

When the paste activator is used, the variations in proportions between the paste and the activator have negligible effect on the characteristics of the material. Higher proportions of the activator result in a slightly thinner consistency of the paste. The ratio between the restorative and the paste activator may vary approximately 3:1 to 6:1 without noticeably affecting the working and setting time of the mix in a self-cure mode, or the depth of cure in the light-cure mode. The use of the liquid activator has pronounced influence on the consistency of the mix. One to two drops of liquid may be used per average restoration; e.g., cementing posts requires a more fluid mix. While consistency of the mix may be varied, depending on the restorative/liquid ratio, the working and setting time in self-cure mode, and depth of cure in light-cure mode, remain virtually the same.

After the material is cured, in either self- or light-cure mode, it can be shaped in the same manner as composite restoratives.

### Helpful Hints

- For achieving uniformity of drops while dispensing the liquid activator, hold the bottle vertically and squeeze it gently, allowing a few seconds for the drop to form.
- *CuRAY-Support*® is packaged in a syringe with a snap-off cap. Dispense the material by turning the screw clockwise. Slow turning is recommended in order to avoid waste. Remove the material dispensed at the tip of the syringe and turn back the screw (counterclockwise) in order to suck back the excess. Replace the cap.

### MIXES OF RESTORATIVE PASTES WITH LIQUID OR PASTE SELF-CURE ACTIVATORS

#### Range of Proportions in the Mix

Amount of Paste Activator	Maximum: 3 parts of restorative to 1 part of activator	Minimum: 6 parts of restorative to 1 part of activator
Amount of Liquid Activator	Maximum: 2 drops*	Minimum: 1 drop*
*for an average 0.5 - 0.8g restoration		

**SPECIAL PROCEDURES**

1. When making core build-up restorations on vital teeth, especially in situations involving proximity of the pulp, the use of *Fluoroseal*® Light-Cured Liner is recommended. A thin layer of *Fluoroseal*® should be applied over exposed dentin and cured with light for 20 seconds, followed by the application of *CuRAY-Support*®.

*The use of Fluoroseal® is also recommended over decalcified, decay-prone dentin, in order to provide an additional measure of protection against secondary decay. A conventional calcium hydroxide type base should be applied to protect the pulp and stimulate secondary dentin formation in cases involving direct pulp exposure.*

2. *CuRAY-Support*®, in either natural or contrast versions, is also suitable for cementing posts. The restorative paste should be thinned to the desired consistency with the liquid activator. Conventional canal preparation, including roughening of the surfaces and thorough drying before cementing, is essential for providing maximum retentive strength.

**CUSTOM CuRAY-SUPPORT® KITS AVAILABLE:**

*CuRAY-Support*®, Contrast Kit      Cat. No. 55-31      Contents:  
20g of contrast shade restorative; other accessories and auxiliary materials as in regular kit

*CuRAY-Support*®, Natural Kit      Cat. No. 55-32      Contents:  
20g of natural shade restorative; other accessories and auxiliary materials as in regular kit

**INDIVIDUAL COMPONENTS AVAILABLE**

<i>CuRAY-Support</i> ®, Restorative, Contrast	Cat. No. 55-301	5g syringe in contrast (blue) shade
<i>CuRAY-Support</i> ®, Restorative, Natural	Cat. No. 55-302	5g syringe in natural (tooth) shade
<i>CuRAY-Support</i> ®, Self-Cure Activator, Liquid	Cat. No. 55-303	6g bottle
<i>CuRAY-Support</i> ®, Self-Cure Activator, Paste	Cat. No. 55-304	4g syringe
<i>Fluoroseal</i> ®, Light-Cure Dentin Liner	Cat. No. 55-305	7g bottle

**STORAGE AND SHELF-LIFE**

Store at temperatures not exceeding 73°F (23°C). When stored under such conditions, the material has a shelf-life of eighteen months. Refrigerate when not in use (for example, overnight and on weekends). When cold, the material has a stiffer consistency. For easier handling, remove from refrigerator at least 15 minutes prior to use.

For technical information, call or write:



Quality Management System Certified to  
**ISO 9001 and ISO 13485**

**CE Marked Products**

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