BISCO

SCIENCE
AND DENTISTRY.
BONDED.

Product Profile

TheraCal LC®

Resin-Modified Calcium Silicate
Pulp Protectant/Liner

Preserve Pulp Vitality with Confidence

Rx Only

MC-9083TC

Table of Contents

TheraCal LC, the trusted solution for predictable pulp protection in modern restorative dentistry

The Clinical Challenge

Treating deep caries and managing pulpal exposures are among the most demanding situations clinicians face in restorative dentistry. In these cases, the clinician's goal is clear: protect the pulp while ensuring long-term restorative success.

However, traditional pulp protection materials can present several limitations, including low calcium release, high solubility, and indications limited to indirect pulp capping and protective lining rather than both direct and indirect pulp capping.

When managing these complex cases, clinicians must carefully balance multiple concerns:

- Managing deep caries approaching the pulp
- Minimizing the risk of pulp exposure during excavation
- Reducing the potential for post-operative sensitivity
- Navigating the unpredictable performance of traditional liners
- Preserving pulp vitality while restoring tooth structure

Achieving predictable outcomes requires both clinical expertise and materials that support the clinician's treatment goals.

TheraCal LC was developed to support clinicians in these challenging situations, providing a light-cured, calcium-releasing liner designed to help protect pulp vitality and promote restorative success.

Product Overview

Managing deep caries and pulp exposures requires confidence. Clinicians need a material that protects the pulp, promotes healing, and integrates seamlessly into restorative workflows. TheraCal LC was developed to give dentists that confidence.

TheraCal LC is a light-cured, resin-modified calcium silicate filled liner designed for use in direct and indirect pulp capping and as a protective liner under composites, amalgams, cements, and other base materials. It can be used as an alternative to calcium hydroxide, glass ionomer, RMGI, IRM/ZOE, and other restorative materials. TheraCal LC performs as a barrier and protectant of the dental pulpal complex.

You gain controlled, precise placement even in challenging deep preparations, and the light-cured set permits immediate placement of the restorative material. Its proprietary formulation allows for a command set with a light-curing unit while maintaining ease of placement due to thixotropic properties. The proprietary resin formulation of TheraCal LC consists of calcium silicate particles in a hydrophilic monomer that provides significant calcium release* making it a uniquely stable and durable material as a liner or base.

TheraCal LC is compatible with any bonding technique and can be applied directly to the pulpal exposure and as a protective liner in the same prep with no need for two separate products.

Calcium release stimulates*[1] hydroxyapatite formation and secondary dentin bridge formation [2-3]

Alkaline pH promotes healing, pulp vitality and apatite formation. [2,4]

Forms a protective barrier that **insulates the pulp** [5-6] from thermal changes resulting in virtually **no post-operative sensitivity**.

Significant calcium release* [1] leads to protective seal. [5,7-8]

Moisture tolerant[1]– low solubility and will not wash out over time.

Radiopaque – visible on radiographs to easily distinguish caries.

Time Saver - Can be directly applied to the pulp exposure and be used as a liner in the same prep, with no need for two separate products.

What is TheraCal LC? Dr. Rolando Nunez has all the answers —click the video to learn more!

Discover TheraCal LC! Click the video above to see its key features, benefits, indications, and why it's a standout pulp-capping solution.

Rolando Nunez, DDS

"TheraCal LC allows clinicians to confidently manage deep cavity preparations while preserving pulp vitality."

Want to see TheraCal LC in action? Click the video above to watch a clinical case where it's used as a liner in a Class II resin-based composite restoration.

Curious about how to use TheraCal LC for pulpal protection? Watch the video above to see the step-by-step restoration technique in action.

Awards & Evaluations

Since its launch in 2011, TheraCal LC has received numerous awards for excellence in restorative dentistry, most notably earning the **Dental Advisor's Top Pulpal Protectant award for 14 consecutive years.** TheraCal LC is trusted by clinicians worldwide for consistent performance and predictable outcomes.

14x Award Winner

1x Award Winner

1x Award Winner

1x Award Winner

TheraCal LC DPS Evaluation

TheraCal LC was awarded a score of 4.2 out of 5 from Dental Product Shopper and is proudly recognized as a Dental Product Shopper Recommended Product!

Additionally, Dental Product Shopper conducted a joint evaluation of TheraCal LC and BISCO's calcium- and fluoride-releasing self-adhesive base material, TheraBase. Both products were featured in the same review, earning a strong score of 3.9. This recognition underscores their reliability and effectiveness in clinical applications.

Check out the video above to learn more about the Dental Product Shopper evaluation!

Want to see full TheraCal LC evaluations? Click on the logos below!

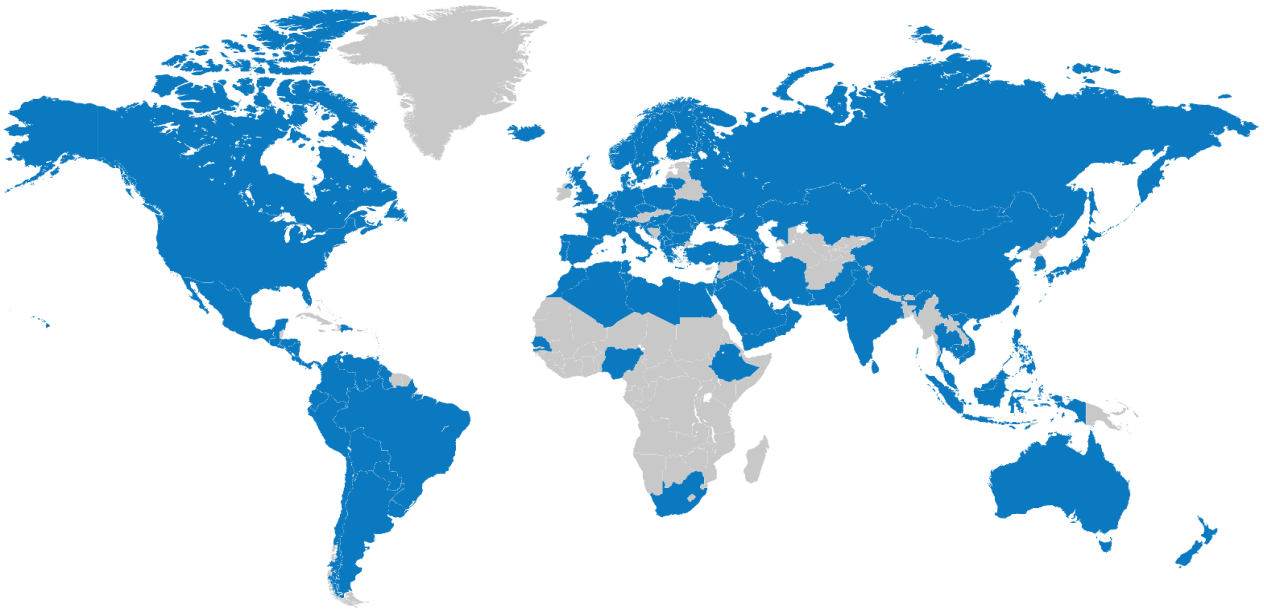
TheraCal LC Evaluation

TheraCal LC Evaluation

TheraCal LC Editor's Choice Report

Global Reach & Impact

Since its 2011 debut, TheraCal LC has reached **90+ countries**, sold over **1.5 million units**, and supported more than **65 million restorations worldwide** — and these numbers continue to grow! *



North America

United States, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Panama, Nicaragua, Trinidad & Tobago

South America

Bolivia, Guyana, Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela

Europe

Albania, Azerbaijan, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom, Kosovo, Macedonia, Moldova, Montenegro, Russia

Asia

Bahrain, Cambodia, China, Georgia, Hong Kong, India, Indonesia, Iran, Isreal, Japan, Kazakhstan, Kuwait, Lebanon, Russia, Malaysia, Pakistan, Philippines, Qatar, Saudi Arabia, Singapore, Sri Lanka, Thailand, Turkey, United Arab Emirates, Vietnam, Armenia, Iraq, Jordan, Korea, Mongolia, Oman, Taiwan, Yemen

Africa

Egypt, Morocco, Nigeria, South Africa, Tunisia, Algeria, Libya, Senegal

Oceania

Australia, New Zealand

*All figures are based on sales data from 2011 to 2025. Estimated number of applications. Samples not included.

Who is TheraCal LC Right For?

Dentists who prioritize high-quality care understand that the materials they choose play a critical role in clinical outcomes. For clinicians who hold themselves to high standards, reliability, performance, and long-term results matter more than simply selecting the lowest-cost option.

TheraCal LC is designed to support dentists who value quality and performance over budget-driven choices. As one of the more advanced, and premium, liner materials available, clinicians rely on materials like TheraCal LC to help deliver predictable restorative outcomes and long-lasting treatment results.

Rather than compromising on materials, these dentists choose solutions that reinforce their clinical judgment and standards of care. TheraCal LC integrates seamlessly into modern restorative workflows, offering predictable handling and dependable performance so clinicians can focus on what matters most, providing exceptional care for their patients.

For practices that believe quality dentistry starts with quality materials, TheraCal LC serves as a trusted partner, supporting the clinician's expertise and commitment to lasting results.

Indications

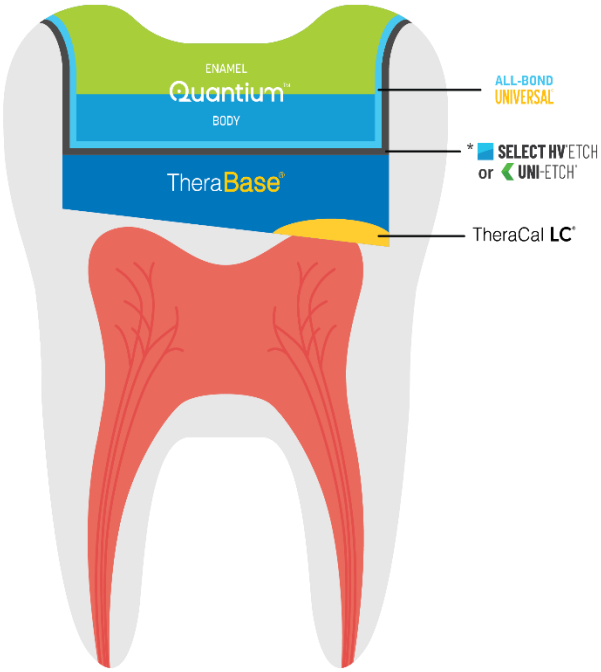
1. TheraCal LC is intended for use as a **direct pulp capping agent**. It may be placed directly on pulpal exposures after hemostasis is obtained. It is indicated for pulpal exposures, including:
    - Carious exposures
    - Mechanical exposures
    - Exposures due to trauma

2. TheraCal LC is intended as an **indirect pulp capping agent** in deep preparations, a protective liner in large preparations, base or sealer for use:
    - Under amalgam restorations
    - Under Class I and Class II composite restorations
    - Under other base materials
    - Under cements
    - As an alternative to calcium hydroxide
    - As an alternative to glass ionomer/RMGI
    - As an alternative to cavity varnish sealer
    - As an alternative to zinc phosphate
    - As an alternative to IRM/ZOE (Intermediate Restorative material)

TheraCal LC Workflow Integration

With the right materials working together as a complete system, clinicians stay in control—confidently completing deep restorations with efficiency, predictability, and exceptional patient outcomes.

TheraCal LC serves as the foundation for pulpal protection in deep restorations. The following materials support a complete, efficient workflow.



Step 1 – Pulpal Protection

In deep restorations & when pulpal exposure occurs, TheraCal LC can be used for direct & indirect pulp capping & as a protective liner.

Step 2 – Base

If a base material is desired, TheraBase could be applied for optimal calcium release with TheraCal LC. *

Step 3 – Etchant**

The surface is conditioned according to the selected bonding protocol. BISCO recommends Select HV Etch for selective-etch and Uni-Etch for total-etch.

Step 4 – Adhesive

All-Bond Universal is applied to create strong, reliable adhesion for long-term restorative success.

Step 5 – Composite

Quantium is applied to restore tooth structure and complete the final restoration.

*BISCO has data on file

**Optional if using self-etch

Select HV® Etch

35% high viscosity phosphoric acid etchant

Developed for the selective-etch technique, but indicated for both selective- and total-etch.

Designed to offer maximum handling and pin-point placement, while eliminating run-on onto the occlusal dentin surface.

Available with the antimicrobial agent Benzalkonium Chloride (BAC)* in select markets.
-Not available in European Union

** NOTE: Inclusion of BAC has not been shown to correlate with a reduction in secondary decay in patients. In-vivo clinical studies to evaluate the effects of BAC on oral bacteria or caries have not been performed.*

Uni-Etch®

32% semi-gel phosphoric acid etchant

Developed for the total-etch technique, but indicated for both total- and selective-etch.

Low viscosity, flowable material allows for easy application to larger surface areas making it ideal for the total-etch technique.

Available with the antimicrobial agent Benzalkonium Chloride (BAC)* in select markets.
-Not available in European Union

** NOTE: Inclusion of BAC has not been shown to correlate with a reduction in secondary decay in patients. In-vivo clinical studies to evaluate the effects of BAC on oral bacteria or caries have not been performed.*

All-Bond Universal®

Light-cured universal dental adhesive

Offers flexibility for total-, self- or selective-etch procedures.

Contains MDP monomers for enhanced durability.

Compatible with all light-, self- and dual-cured resin composite and cement materials for all direct and indirect procedures (no activator required).

Quantium™

Light-cured universal composite

Low volumetric shrinkage, which minimizes microleakage and ensures marginal adaptation.

Highly radiopaque for easy identification on radiographs aiding in post- treatment evaluation, allowing clinicians to confidently monitor the integrity of the restoration.

Delivers smooth, non-sticky handling and its unit dose capsules can be warmed for an even greater flowable experience, depending on the clinician's needs and preference.

Click on the eBook to learn more about BISCO's Perfect Pairs!

TheraBase®

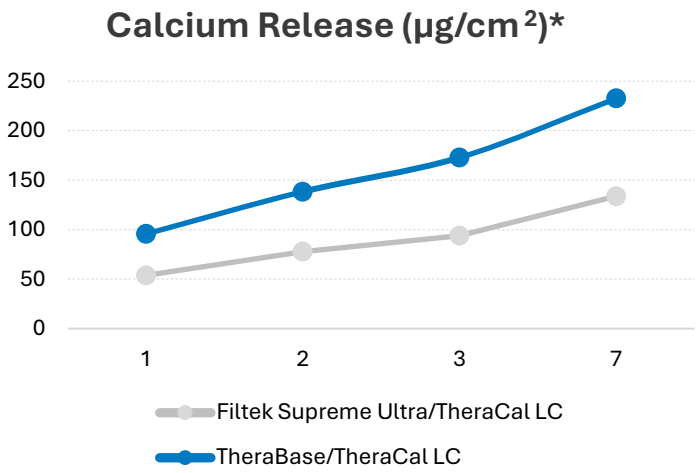
Dual-cure, self-adhesive base/liner.

Offers continuous calcium and fluoride release. *
-Fluoride release not available in European Union. See TheraBase Ca (calcium only).

Visible on radiograph to easily distinguish from caries.

Generates an alkaline pH (pH = 11*) in minutes, which promotes pulp vitality.[4]

**BISCO has data on file.*



Did You Know?

Internal testing shows that combining TheraBase with TheraCal LC results in 75% greater calcium release compared to using TheraCal LC with a composite alone providing optimal calcium release. *

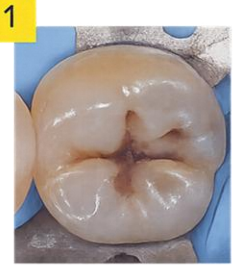
*BISCO has data on file

Clinical Cases

See how clinicians use TheraCal LC to preserve pulp vitality and complete restorations with confidence!

Indirect Pulp Capping

1



Isolate tooth.

2

Remove infected carious tooth structure. Leave preparation visibly moist.

3

Apply TheraCal LC directly to visibly moist dentin. Layer is not to exceed 1mm in depth. Manipulate into a smooth surface. Light-cure for 20 seconds.

4

Continue tooth restoration.

Dentistry Courtesy of Dr. Juan Angel Castro

Direct Pulp Capping

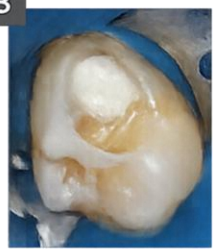
1

Isolate tooth.

2

Remove infected carious tooth structure. Achieve hemostasis. Leave preparation visibly moist.

3

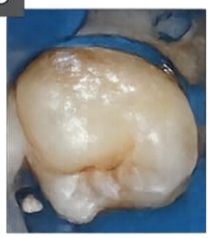


Apply TheraCal LC directly to exposed dentin. Layer is not to exceed 1mm in depth. Cover all the exposed areas and extend TheraCal LC at least 1mm onto sound dentin surrounding the exposure. Light-cure for 20 seconds.

4

Apply adhesive (All-Bond Universal with selective-etch technique shown)

5



Continue tooth restoration.

Dentistry Courtesy of Dr. Elvio Durando

Chemistry

TheraCal LC is an advanced light-cured pulp capping and lining material that's part of BISCO's award-winning Thera product line. Its chemical composition has been optimized for maximum performance, making it reliable and easy to use for dental procedures. These chemical innovations allow clinicians to deliver both clinical benefits and durable restorations.

*BISCO has data on file

Designed for Pulp Compatibility

TheraCal LC is formulated without the following components:

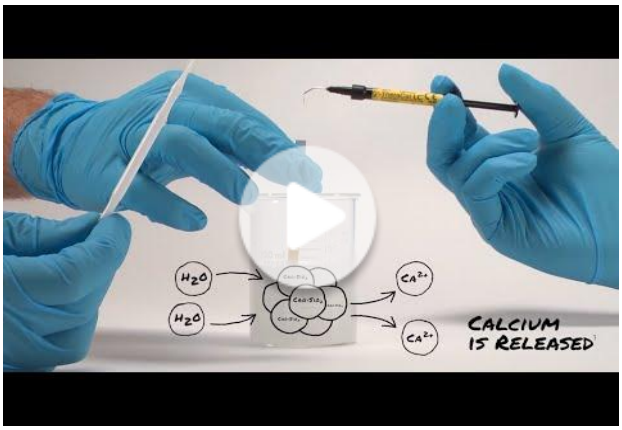
HEMA Presence can cause inflammation and irritation to the pulp.

Ethanol Presence can cause irritation to the pulp.

MDP Contains an acidic pH which can be detrimental to the exposed pulp.

The Importance of an Alkaline pH

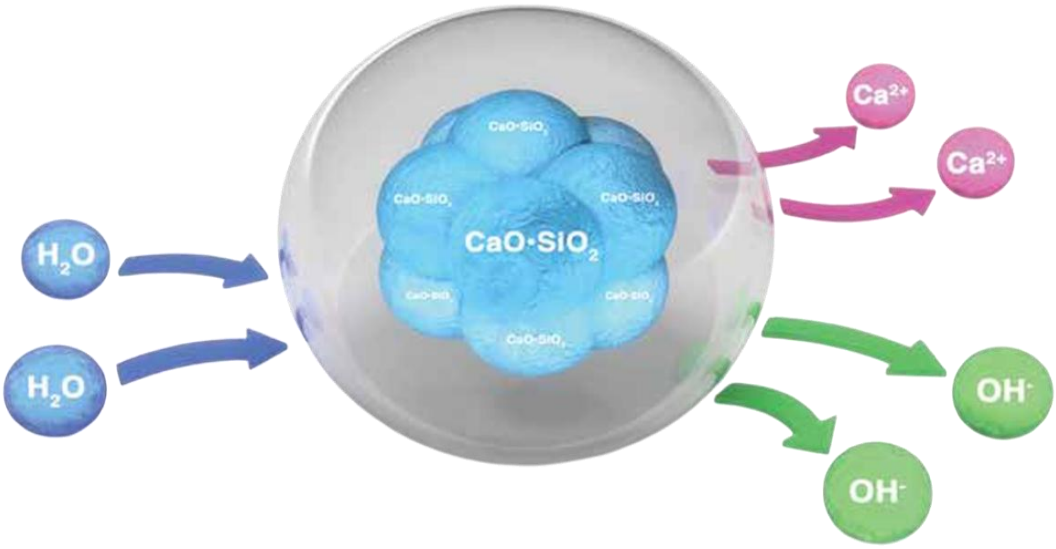
TheraCal LC pH Demonstration



Did you know TheraCal LC reaches an alkaline pH of 10-11 in 3 hours.[1]

Click on the videos above to learn why maintaining an alkaline pH is critical for pulpal protection!

Powered by Thera Technology



Thera / Therapeutic	**=**	**Calcium Ion Release**
Thera Calcium Source	**=**	**Calcium Silicates**

BISCO has engineered a proprietary hydrophilic resin matrix that enables effective ion exchange—a significant advancement over traditional hydrophobic resin matrices. This unique composition allows water to penetrate the matrix, triggering the release of calcium hydroxide ions. * The formulation of TheraCal LC incorporates calcium silicate particles suspended in a hydrophilic monomer, resulting in enhanced and sustained calcium ion release. * This distinctive feature supports TheraCal LC's role as a highly stable and durable material for liners and pulp capping, offering both therapeutic benefits and mechanical strength.

Click on the videos below to learn more about BISCO's Thera Technology!

The Resin Matrix

Calcium Releasing Materials

*BISCO has data on file

Biocompatibility

TheraCal LC has been thoroughly evaluated for biocompatibility as part of device design. Applicable testing has been conducted as indicated by international standards including the following:

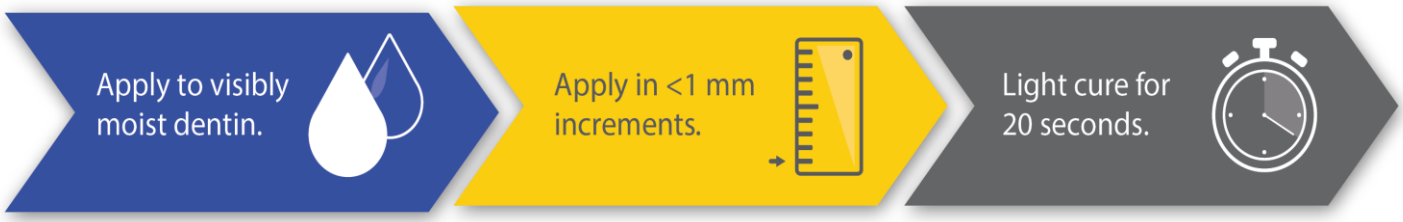
- ISO 10993: Biological evaluation of medical devices
- ISO 7405: Evaluation of biocompatibility of medical devices used in dentistry
- ISO 14971: Application of risk management to medical devices

Material characterization, risk assessment, biological testing, and available information on all raw materials have been assessed to determine that TheraCal LC is safe for its intended use. The device has been cleared for sale by regulatory agencies in applicable markets.

Cytotoxicity & Pulpal Cell Viability

Although resin-modified materials have been criticized for potential cytotoxicity, TheraCal LC has been evaluated through standardized biological testing and published in vitro studies. Cytotoxicity testing conducted as part of the biological evaluation demonstrated that TheraCal LC meets the acceptance criteria of ISO 10993-5 for in vitro cytotoxicity, indicating a non-cytotoxic response under the conditions of the assay.[9] Additionally, an independent in vitro study using human dental pulp stem cells reported cell viability greater than 80% following exposure to material extracts, further supporting a lack of cytotoxic effects in a pulp-relevant cell model.[10]

It's also worth noting that multiple studies have consistently shown that TheraCal LC maintains its biocompatibility when used according to its instructions for use. [11-13]

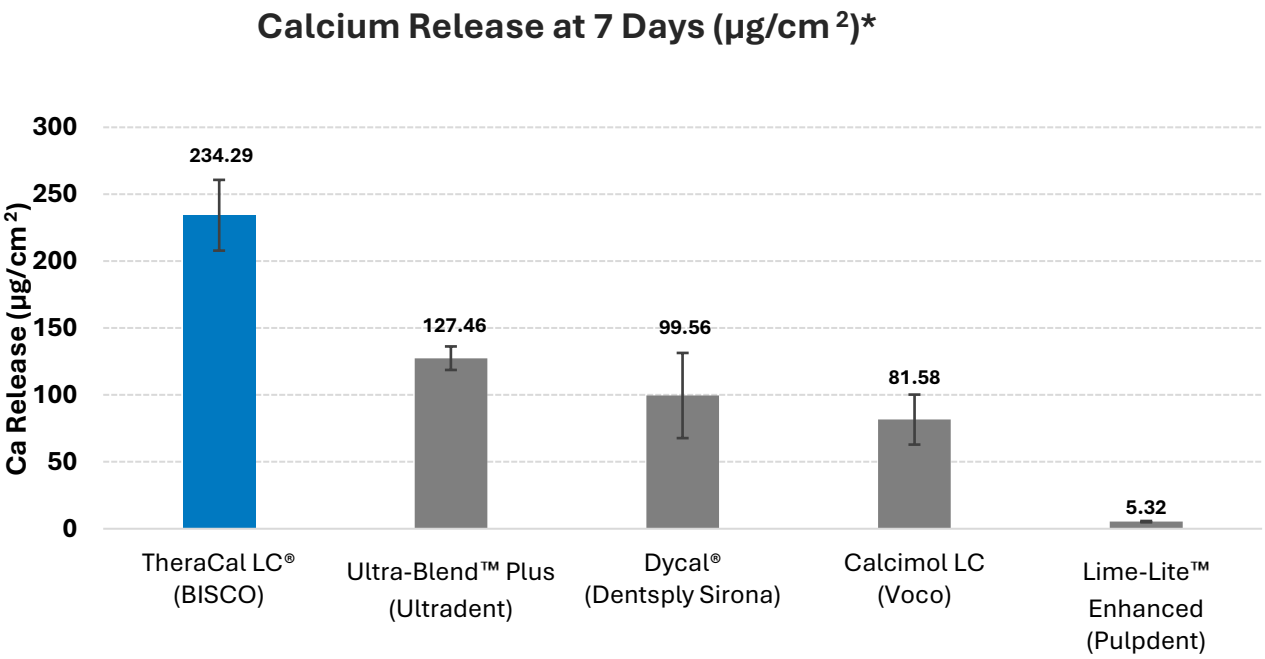


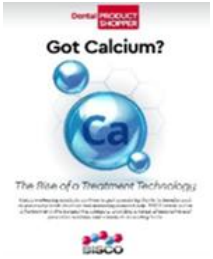
Physical Properties

Superior Calcium Release

TheraCal LC stands out for its exceptional calcium release*, outperforming leading competitors. Calcium release plays a vital role in restorative dentistry by supporting pulpal healing, elevating local pH, and promoting apatite and dentin bridge formation. [1-3]

See the chart below which provides a direct comparison between TheraCal LC and top competitors, illustrating its superior calcium release!





Click on the eBook to learn more about the clinical benefits of calcium-releasing materials!

*BISCO has data on file

Water Sorption & Solubility

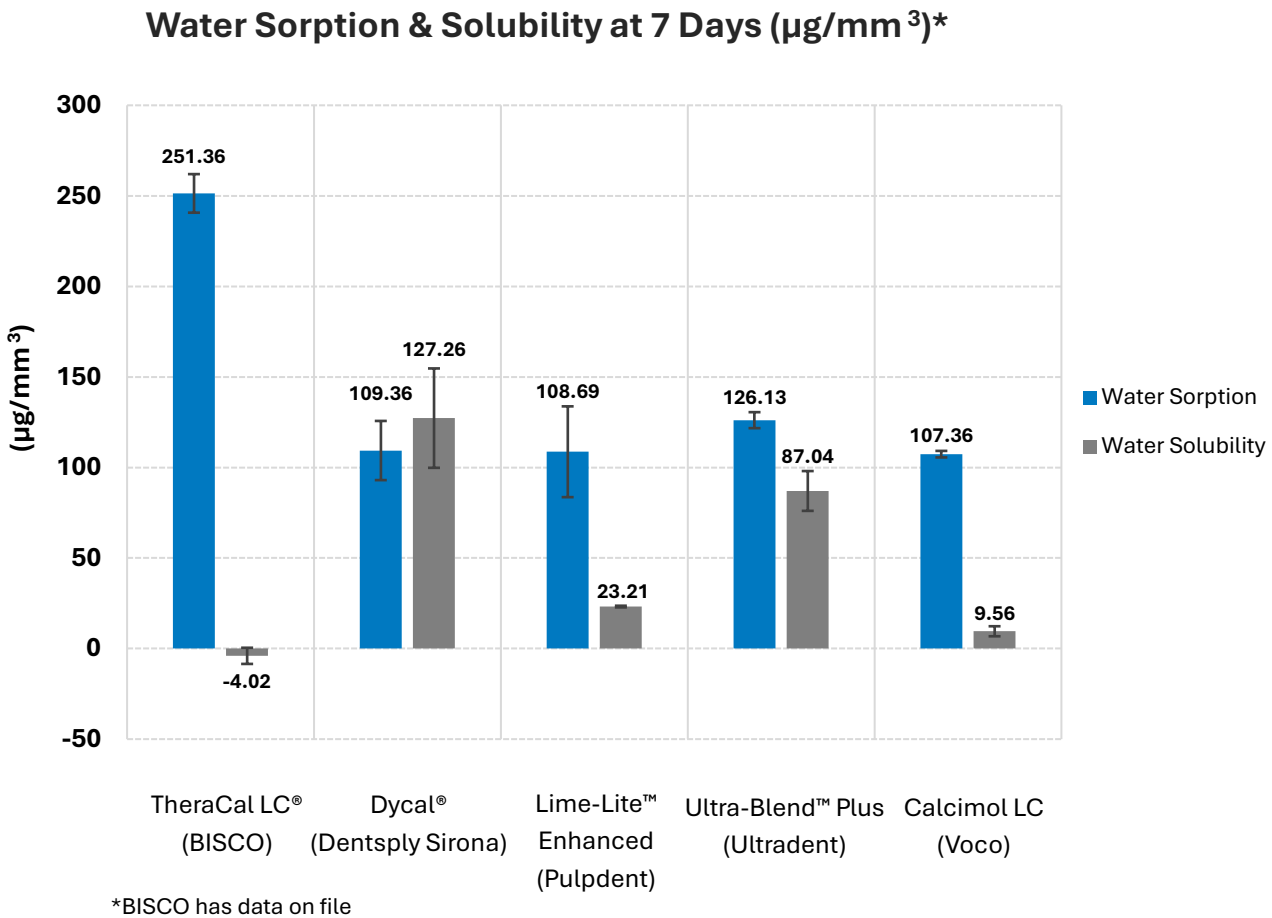
Water sorption and solubility are critical factors in the performance of dental materials.

In materials like TheraCal LC, water sorption is essential—it enables the release of calcium ions, which promotes apatite formation and secondary dentin bridge development. *[1-3]

While it's often assumed that higher water sorption leads to increased solubility, TheraCal LC is uniquely formulated with a proprietary resin matrix that allows for ion exchange without compromising stability. In fact, TheraCal LC exhibits a negative water solubility value, meaning it absorbs water rather than dissolves. This low solubility is vital for maintaining material integrity, preventing washout, and ensuring long-term clinical success.

High solubility is one of the major issues with traditional materials such as calcium hydroxide.[14] Elevated solubility may lead to softening of the liner and loss of material under poorly sealed restoration, where the oral fluids can penetrate through the tooth – restoration interface and partially or completely dissolve the pulp protecting material.[15] TheraCal LC on the other hand maintains material integrity and won't dissolve over time.

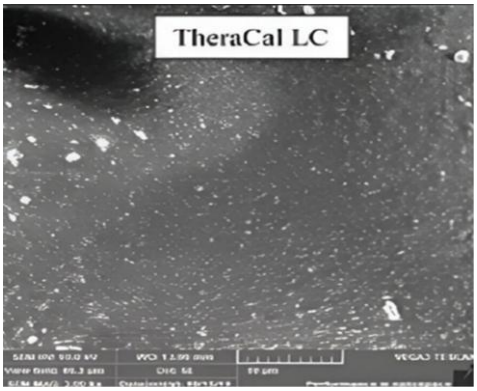
Check out the charts below to see how TheraCal LC delivers superior water sorption and ultra-low solubility compared to other leading materials!



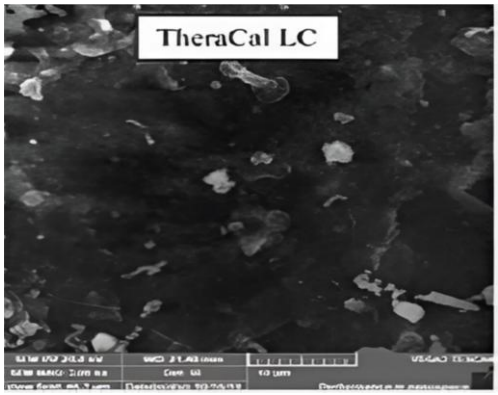
*BISCO has data on file

Apatite Formation

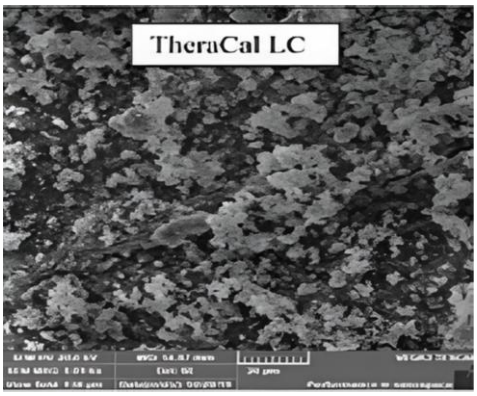
Due to its calcium-silicate composition, TheraCal LC demonstrates excellent apatite formation in-vitro[11] and dentin bridge formation in-vivo[16]. Using various characterization techniques, the surfaces of TheraCal LC have been shown to promote calcium and phosphate deposition, indicating the potential development of an apatite layer. Apatite formation plays a critical role in the healing process.[17] Studies have also shown that TheraCal LC exhibits significantly higher hard tissue bridge formation and greater bridge thickness at 28 days.[16]



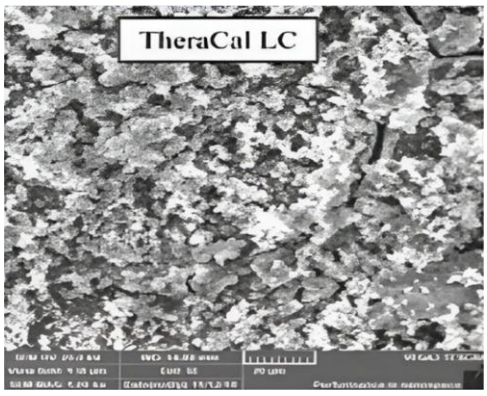
Immediately After Setting



1 Day After Setting



14 Days After Setting



28 Days After Setting

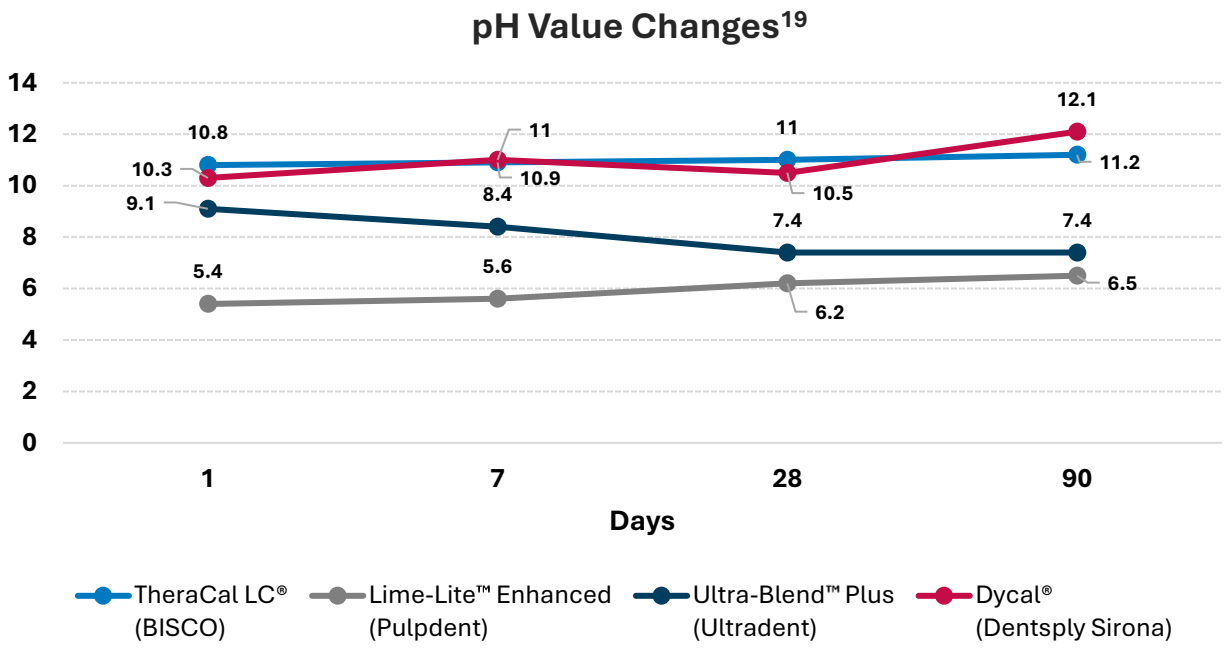
Images courtesy of Elbanna et al., Dent Res J (Isfahan), 2022.

SEM images show apatite formation for TheraCal LC immediately after setting and up to 28 days in phosphate-buffered saline. No apatite is seen at first, but clear formation is shown after 28 days.[11]

pH Value Changes

TheraCal LC reaches an alkaline pH of approximately 10–11 within three hours. [1] An alkaline pH is essential, as it supports healing, maintains pulp vitality, and facilitates apatite formation. [2,4] Coversely, an acidic environment (pH < 7) can be harmful to exposed pulpal tissue.[18]

Refer to the chart below, which compares the pH levels of various liners. TheraCal LC consistently maintains an alkaline pH of 10–11 over a 90-day period.



Competitor Comparison Chart

	 TheraCal LC® (BISCO)	 Dycal® (Dentsply)	 Lime-Lite™ Enhanced (Pulpdent)	 Ultra-Blend™ Plus (Ultradent)	 Calcimol LC (Voco)
Cure Mode	**Light**	Self	Light	Light	Light
Storage*	**Room Temperature**	At or below room temperature not exceeding 25°C/77°F	Room Temperature	Room Tempera-ture. Refrigerate bulk storage	Store at 4°C-23°C (39°F - 73°F)
Direct Pulp Capping	**Yes**	Yes	No	Yes	No
Indirect Pulp Capping	**Yes**	Yes	Yes	Yes	Yes
7 Day Calcium Release**	**234.29 µg/cm^2**	99.56 µg/cm^2	5.32 µg/cm^2	127.46 µg/cm^2	81.58 µg/cm^2
7 Day Water Sorption**	**251.36 µg/mm^3**	109.36 µg/mm^3	108.69 µg/mm^3	126.13 µg/mm^3	107.36 µg/mm^3
7 Day Water Solubility**	**-4.02 µg/mm^3**	127.26 µg/mm^3	23.21 µg/mm^3	87.04 µg/mm^3	9.56 µg/mm^3
Radiopacity**	**1.79 mm Al**	1.55 mm Al	2.21 mm Al	0.73 mm Al	1.51 mm Al

* Per manufacturer's instructions for use.

** BISCO has data on file

TheraCal LC VS Glass Ionomers & RMGI

1

Calcium Release

TheraCal LC's calcium release[1]* stimulates hydroxyapatite and secondary dentin bridge formation that leads to a protective seal and insulation of the pulp. [2,3]

No Calcium Release

Glass ionomers and RMGI's have fluoride release but do not contain or release calcium.

2

Direct Pulp Capping

TheraCal LC is indicated as a direct pulp capping material and as a liner. TheraCal LC generates an alkaline pH that promotes healing and apatite formation. [2,4]

Not For Direct Pulp Capping

There are several studies that suggest RMGI's should not be used directly on the pulp, as it can be cytotoxic which is frequently attributed to HEMA.[20-24] Studies also show that glass ionomers should not be used directly on the pulp, as the material's initial acidity may generate damage and its fluoride release has cytotoxic effects on the pulp.[23,25]

3

Easy Syringe Delivery

TheraCal LC's easy and fast syringe delivery offers controlled and precise placement in all deep cavity preparations on moist dentin. TheraCal LC is easy to manipulate without running or slumping and its light-cured ability permits immediate placement of restorative material.

Manual Mixing

Glass ionomers or resin-modified glass ionomers typically require manual mixing, trituration or a special dispenser.

4

Save a Step! Save $! Save Time!

With TheraCal LC, there is NO need for two separate products. TheraCal LC can be directly applied to the pulp exposure and be used as a liner in the same prep. Save a step! Save $! Save Time!

More Steps. More $. More Time.

When performing a sandwich technique, calcium hydroxide or MTA would be placed directly to a pulp exposure prior to placing the liner or base with a glass ionomer or resin-modified glass ionomer material.

* BISCO has data on file

TheraCal LC VS Calcium Hydroxide

1 Any Etch/Bond System

After TheraCal LC has been light-cured, the material can be used with all etch techniques (self-, selective and total-etch) for optimal bonding and finishing of the restoration.

2 Low Solubility

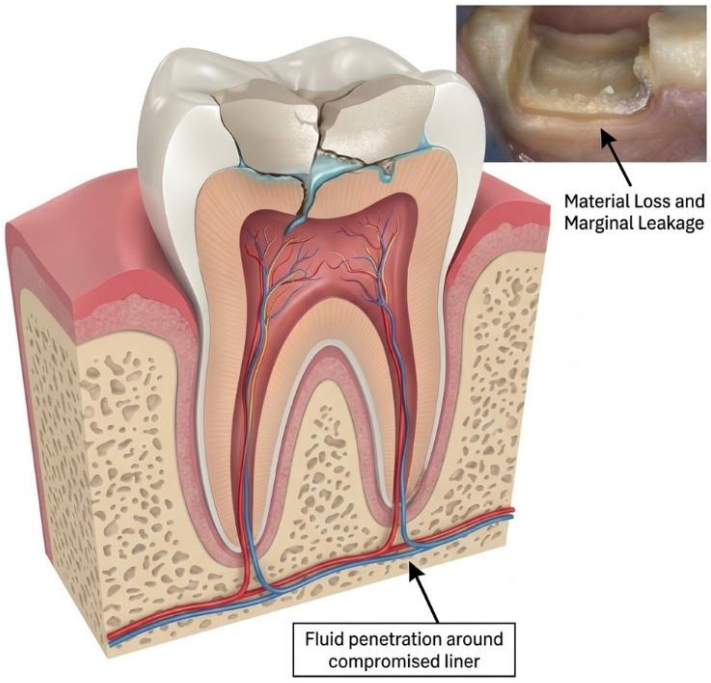
TheraCal LC is indicated as a direct pulp capping material and as a liner. TheraCal LC generates an alkaline pH that promotes healing and apatite formation. [2,4]

Incompatible With Etch

Calcium hydroxide liners should not be acid etched as it might soften and smear over the walls of the cavity, which may contaminate acid-etched enamel and produce an inferior bond.[1]

High Solubility

Calcium hydroxide "has high solubility and water sorption,[14] which may result in softening of the liner and in material loss under poorly sealed tooth– restoration interface where the oral fluids can penetrate through and partially or totally dissolve this pulp-protecting material."[15]



Technique Guide

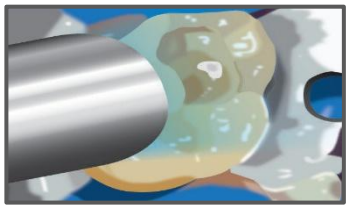
TheraCal LC features a simple technique designed for efficient restorative workflows!

Direct Pulp Capping

1. Under rubber dam isolation, complete cavity preparation.

2. Achieve hemostasis. Leave dentin visibly moist.

3. Apply TheraCal LC directly to the exposed pulp. Layer is not to exceed 1mm in depth. Cover all the exposed areas and extend TheraCal LC at least 1mm onto sound dentin surrounding the exposure.



4. Light cure for 20 seconds. Place desired adhesive, base, and/or restoration following manufacturer's directions. Continue restoring tooth.

Indirect Pulp Capping

1. Isolate the tooth and perform conventional cavity preparation. Remove all infected carious tooth structure. Leave dentin visibly moist.

2. Apply TheraCal LC directly to the cavity floor of the preparation. Layer is not to exceed 1mm in depth. Manipulate into a smooth surface covering all deep dentin areas.

3. Light cure for 20 seconds. Place desired adhesive, base, and/or restoration following manufacturer's directions. Continue restoring tooth.

Scan the QR code to watch a quick 'how-to' demonstration!

The Liner Above the Rest

TheraCal LC stands apart as a superior, innovative liner that empowers you, the dentist, to deliver confident, efficient care while achieving optimal clinical outcomes for your patients.

1. 

Calcium Release*

Releases calcium to stimulate hydroxyapatite formation [1,2] and secondary dentin bridge formation.[2,3]

2. 

Alkaline pH

Creates an alkaline environment that promotes pulp vitality.[4]

3. 
Radiopaque

Clearly visible on radiographs, making it easy to distinguish from caries and support accurate diagnosis.

4. 
Insulation

Forms a protective barrier to protect the pulp from thermal changes.[5,6]

5. 
Compatible With Any Bonding Technique

Seamlessly integrates into your preferred adhesive protocol — simplifying workflow without compromising performance.

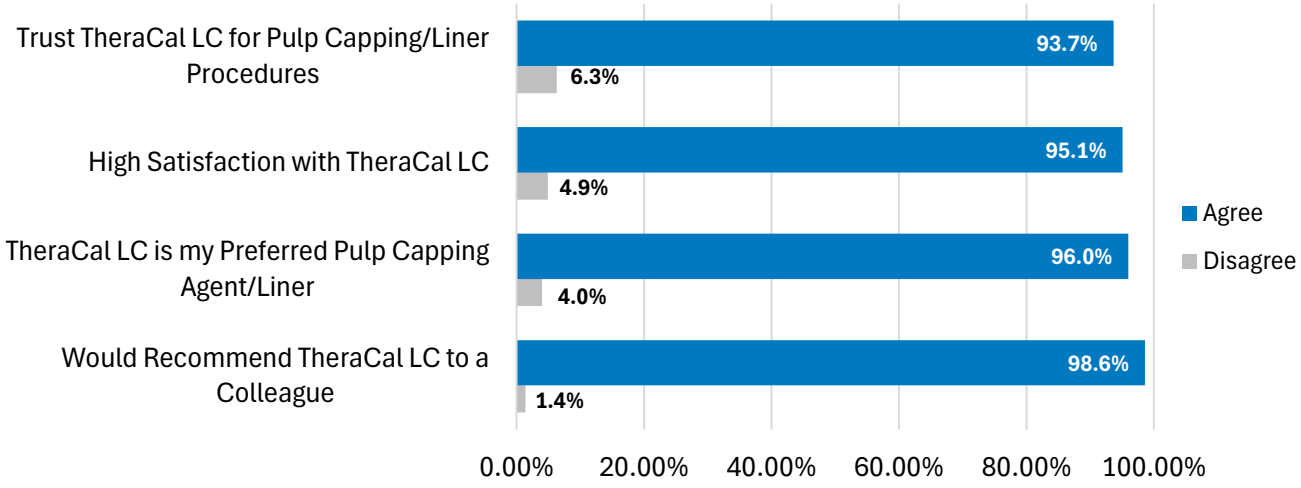
* BISCO has data on file

Customer Feedback

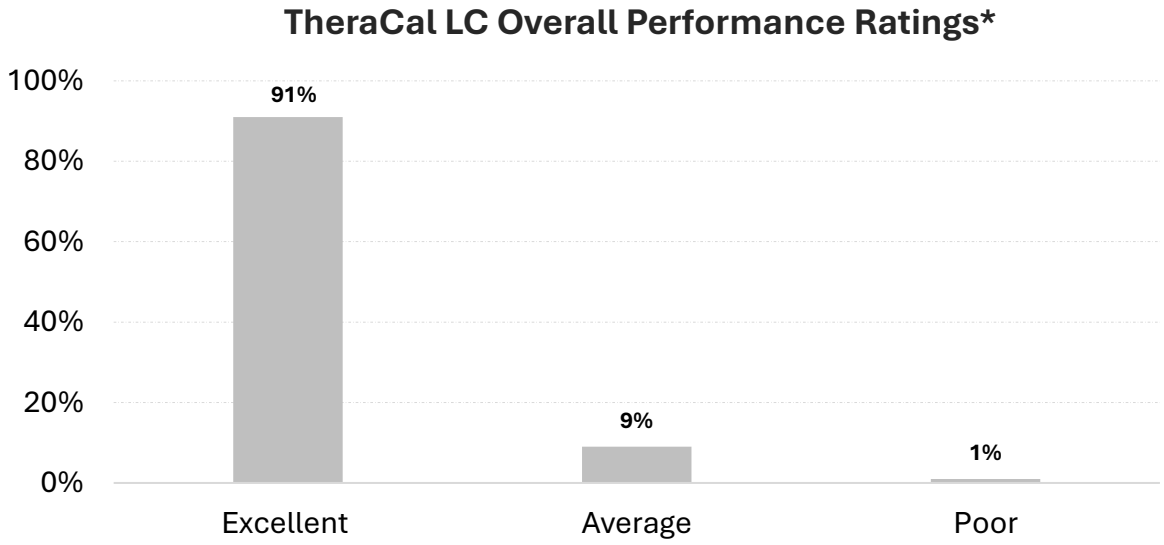
An online survey was conducted to collect customer feedback from active TheraCal LC users in the United States, yielding 349 responses in total. The survey was carefully designed with a series of rating-scale questions to thoroughly evaluate key aspects of the material, including its performance, ease of use, and overall user satisfaction. Survey results confirm what clinicians experience daily: predictable performance and reliable pulp protection.

Customer Satisfaction

Survey respondents reported high levels of satisfaction with TheraCal LC, citing consistent performance, ease of use, and clinical reliability. The chart below presents their responses to satisfaction-related questions. *



When asked how they would assess TheraCal LC's overall performance, almost all respondents gave it an excellent rating.



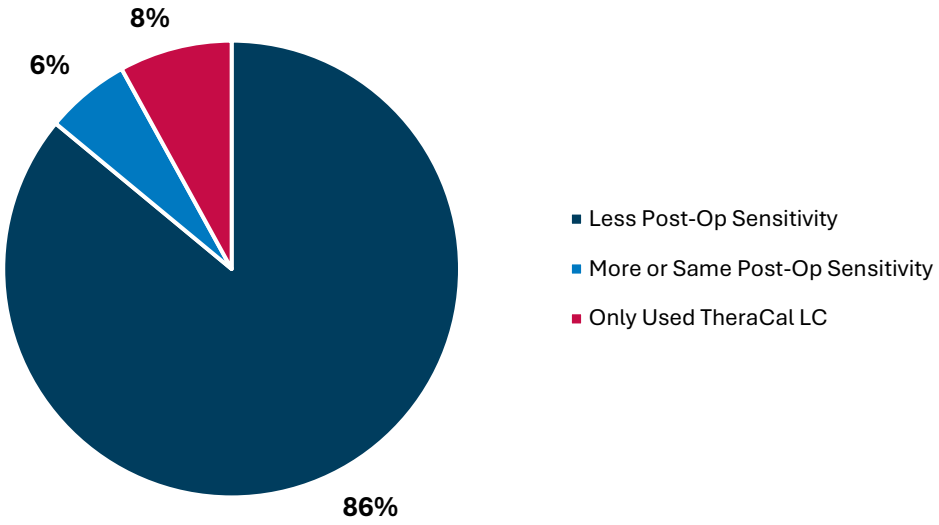
*BISCO has data on file

Post-Operative Sensitivity

When asked about post-operative sensitivity following the use of TheraCal LC compared to other pulp capping & liner materials, 86% of respondents reported experiencing fewer instances of sensitivity.

It is worth noting that 8% of respondents have only used TheraCal LC and have not used other pulp capping or liner materials for comparison.

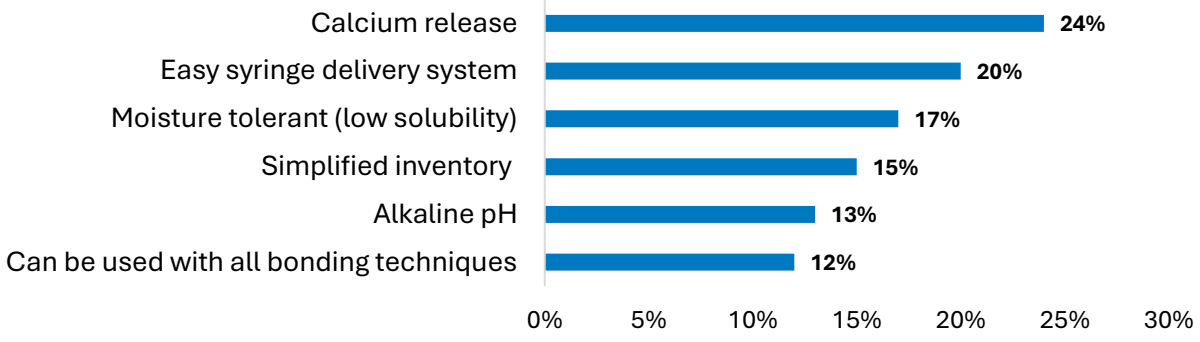
Post-Op Sensitivity Ratings: TheraCal LC Compared to Other Pulp Capping & Liner Materials*



Most Valued Features

When asked to identify the three most desirable features TheraCal LC, the majority of respondents highlighted its calcium release, easy syringe delivery system, and low solubility contributing to their positive experience. The chart below illustrates which features respondents found most desirable.

Respondent Ratings of TheraCal LC's Top 3 Most Desirable Features*



*BISCO has data on file

Customer Testimonials

Hear what dentists across the country are saying about their experience using TheraCal LC in everyday restorative procedures!

Resmi Nair, DMD,
Rutland, MA

"TheraCal LC is a game-changer in preserving the integrity of the pulp while streamlining the restorative workflow. Its become my go-to for liners and pulp capping, and I wouldn't practice without it."

Jessica Meyers, DDS,
Bellaire, TX

"TheraCal is one the of best products I have every used! From ease of application to stability to helping reduce any potential discomfort or sensitivity from deep fillings, TheraCal is the best product in its category without a doubt!"

Christopher Sanginiti, DDS,
Glen Burnie, MD

"TheraCal LC is my go-to for all pulp capping procedures. By far the most straightforward delivery technique of products I've used and excellent clinical results."

Kamyar Moradian, DDS,
Valley Village, CA

"I switched from Lime-Lite to TheraCal LC and never looking back!"

Mary Tierney, DDS, MS
Chicago, IL

"Switched to TheraCal LC years ago with lots of success! No looking back!"

Frequently Asked Questions

1. What are the differences and similarities between TheraCal LC Mineral Trioxide Aggregate (MTA) material?

TheraCal LC is a resin-modified calcium silicate that has enhanced physical properties when compared to MTA material. Essentially, the primary chemical used in both materials are similar (Portland cement) but TheraCal LC contains a hydrophilic resin, which allows for immediate light curing and facilitates calcium release. Similar to MTA material, TheraCal LC promotes healing due to the alkaline pH, and the calcium release assists in the formation of dentin bridge.

2. What is the difference between TheraCal LC and Calcium Hydroxide?

Calcium hydroxide is the primary chemical contained in many dentin liners and pulp capping agents. One of the known limitations of calcium hydroxide-based materials is their relatively high solubility, which leads to dissolution of the material over time.

3. Is bonding necessary before placing TheraCal LC?

No, bonding is neither necessary nor recommended before applying TheraCal LC to dentin. Applying a bonding agent beforehand can interfere with calcium ion release, as it creates a barrier between the tooth structure and the material. Additionally, the bonding agent will prevent water from entering the resin matrix of TheraCal LC, further hindering calcium release. To maximize calcium ion release, do not use a bonding agent prior to placement.

4. I am using RMGI for liners and pulp-capping; why should I switch?

TheraCal LC promotes hydroxyl-apatite formation through ion/water exchange with the tooth structure. *[1-3] Resin-modified glass ionomers are unable to promote hydroxyl-apatite formation and have been shown to be cytotoxic to the pulpal complex. [20-26] Due to the inclusion of polyacrylic acid, RMGI's may actually inhibit apatite formation.[26]

5. What are the storage requirements for TheraCal LC?

TheraCal LC should be stored at room temperature (20°C/68°F – 25°C/77°F) and has a shelf life of 2 years from the date of manufacture. To maximize calcium ion release, do not use a bonding agent prior to placement.

6. How many applications do I get out of a TheraCal LC syringe?

1g Syringe of TheraCal LC can provide approximately 12-15 liner applications and approximately 20 direct pulp cap applications.

4-pack of TheraCal LC 1g syringes can perform approximately 48 pulp capping/liner applications (12 applications per 1g syringe).

Ordering Information

Syringe Pack

H-33014P

TheraCal LC (4 x 1g) Syringe Pack
4 Syringes TheraCal LC (1g ea.), Accessories, Instructions

Refill

H-3301P

TheraCal LC 1g Syringe Refill
1 Syringe TheraCal LC (1g), Accessories, Instructions

Accessories

X-80621N

Black Disposable Syringe Tips (22 Gauge)
50 ct. Black Disposable Syringe Tips (22 Gauge) used with TheraCal LC

TheraCal LC has set the benchmark for performance, reliability, and clinical confidence. Trusted by clinicians worldwide, it continues to raise the bar in pulpal protection, delivering consistent results you can depend on every day.

Join the growing number of clinicians who have already made the switch to TheraCal LC!

Call us! We're here to help:

1-800-247-3368

www.bisco.com

BISCO

THE BISCO STORY

Find out how BISCO's beginnings form the foundation of our commitment to lasting results and confident smiles

Restoration, Simplified

BISCO founder Dr. Byoung Suh began his scientific career as a research chemist developing restorative bonding products. In 1981, he founded BISCO to provide simplified, effective restoration solutions.

Over 40 years later, this goal guides BISCO's work to revolutionize bonding and make better dentistry possible across key areas:

- **Treatment Outcomes**
- **Efficiency**
- **Cost Savings**
- **Patient Satisfaction**

The Values Behind the Science

BISCO's commitment to better restorative dentistry goes beyond a passion for science. Guided by our core values, we apply our passion to offer you solutions.

Sharing Knowledge
We're always available to help you get the right solutions and perform your best dentistry.

Innovative Thinking
We incorporate customer feedback and industry conversations to design simple, effective products.

A Growth Mindset
We continuously evaluate our solutions for new ways to overcome common challenges.

Integrity
Every BISCO product is thoroughly researched and tested - often for years - before launch.

Bonding Breakthroughs

You tell us what you need - and we find a way. Here are some BISCO products that have helped to streamline protocols and deliver better results.

2009 **Z-Prime™ Plus**
The first dedicated zirconia primer

2011 **TheraCal LC®**
The first combined pulpcapping agent and liner

2012 **All-Bond Universal®**
A powerful, reliable single-bottle bonding agent

2016 **TheraCem ®**
A self-adhesive cement with THERA technology/zirconia bonding

For over 40 years, BISCO innovations have helped clinicians deliver predictable outcomes and preseve natural dentition.

BISCO: Who We Are

At BISCO, we cherish our customers as if they were part of our own family. We are committed to delivering exceptional service and support every step of the way.

Corporate Video

Click here to learn more about who we are and our history!

Trusted by Dentists Who Demand Predictable Results

John Horn, DMD
Horn Family Dental

"BISCO puts out very good products that every general dentist can use, and these competitively priced products produce outstanding results. BISCO just provides the personal touch."

Lauren Yasuda Rainey, DDS

"BISCO is a solid organization, from chemical science to clinical delivery. Their top-notch customer service and knowledgeable team help me understand the research behind their materials, giving me confidence in patient care. Dentistry can be unpredictable, but with BISCO, I know I'll get consistent, reliable results."

BISCO's Direct-to-You Promise

Get the customer-driven products and services you need from the experts who make them. BISCO is a direct-to-you company, meaning we sell, ship, and serve our customers directly, and you can ONLY get BISCO products directly from us. This allows us to provide you with special advantages that you can't get anywhere else and because BISCO works directly with clinicians, you receive faster support, better pricing and innovations designed around real clinical challenges. With BISCO, it's not just dental products; it's a whole lot more!

DIRECT PRODUCTION
BISCO controls every aspect of the manufacturing process to always deliver the best quality.

DIRECT CONNECTION
Your feedback guides our new offerings and continuous product improvements.

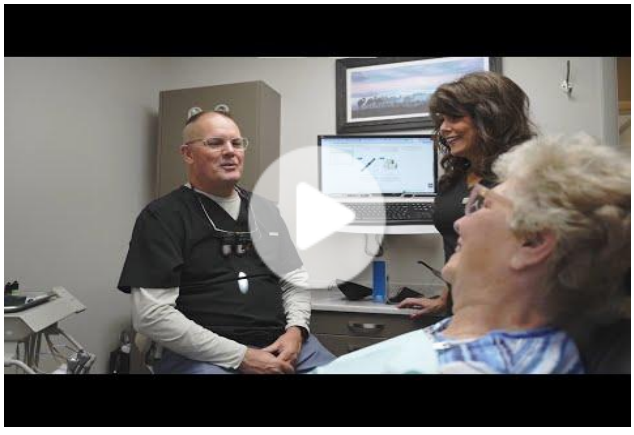
DIRECT ACCOUNTABILITY
If you're not satisfied for any reason, we'll give you a 100% refund.

DIRECT SERVICE
Speak with a BISCO expert and get real-time answers about accounts, products and inventory optimization.

DIRECT DELIVERY
Get fresh inventory straight to your door for the longest possible shelf life.

DIRECT SAVINGS
Quality, innovation and reduced inventory – without the distributor markup.

Dr. John Horn's Direct-to-You BISCO Experience



Click on the video to hear about Dr. John Horn's direct-to-you experience with BISCO!

VISIT US AT WWW.BISCO.COM FOR A COMPLETE PRODUCT CATALOG!

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