



Manufactured in U.S.A. by:

SCI-PHARM®

Sci-Pharm Catalog Nos. 50-02/51-02
Glass Ionomer Restorative,
Liner and Cement

TECHNICAL BULLETIN Instructions

GLASION®

GLASS IONOMER RESTORATIVE, LINER AND CEMENT

KIT CONTENTS

50-02 Regular Size Kit

- 25g Powder
- 15cc Liquid

51-02 Economy Size Kit

- 100g Powder
- 60cc Liquid



Cat. Nos. 50-02 & 51-02

OUTSTANDING FEATURES OF THE MATERIAL

INTRODUCTION

Glasion® represents an advanced glass ionomer formulation designed for a broad scope of uses. It offers excellent reproducibility of physical properties and setting characteristics, along with all other features that make glass ionomers so prominent among the materials used in modern dentistry.

Glass ionomers are expected to have a secure place in dentistry in years to come. Their unique characteristics, including the ability to bond to dentin and cariostatic properties due to fluoride release, make glass ionomer the material of choice in many clinical situations as luting agent, cavity liner or restorative.

Unfortunately, overly aggressive marketing and exaggerated claims are doing a lot of harm to the reputation of glass ionomers. Glass ionomers are often applied indiscriminately in clinical situations or applications where they are clearly not suitable or where other types of materials would provide much better service. In this bulletin, we have attempted to provide objective information regarding their advantages and shortcomings in their main clinical applications.

CAUTION

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

A. USE AS A LUTING AGENT FOR CONVENTIONAL DENTAL PROSTHESES

Advantages:

- Bonds to dentin
- Cariostatic

Disadvantages:

- High early solubility
- Pulp irritation potential
- Sensitive to exact proportioning of powder and liquid

Indications:

- On non-vital teeth
- With shallow crowns and where adequate retention is of concern

Contraindications:

- Sensitive teeth
- Proximity to the pulp
- Where moisture control is difficult

B. USE AS AN ORTHODONTIC BAND CEMENT

Advantages:

- Bonds to enamel
- Prevents enamel decalcification
- Cariostatic

Disadvantages:

- Slightly more time consuming application

Indications:

- Most clinical situations; particularly indicated in cases of poor oral hygiene

Contraindications:

- Use on teeth where moisture control may pose a problem

C. USE FOR CORONAL BUILD-UP

Advantages:

- Bonds to dentin
- Cariostatic

Disadvantages:

- Rather difficult handling
- Marginal mechanical strength, especially in thin layers; brittle

Indications:

- Where maximum retention is desired

Contraindications:

- In situations where material is applied in thin layers
- Where high mechanical strength is desired

D. USE AS A CAVITY LINER

Advantages:

- Bonds to dentin
- Cariostatic

Disadvantages:

- More difficult to apply than modern light-cured resin liners
- Needs etching if applied under composite restoratives
- Use of calcium hydroxide bases is indicated in case of pulp exposure or pulp proximity

Indications:

- Shallow restorations

Contraindications:

- Where moisture control is difficult
- Generally, under composite restoratives where light-cured resin based liners offer better compatibility and easier handling
- In deep restorations (proximity to the pulp)

E. USE AS RESTORATIVE MATERIAL

Glass ionomers should be used with great discretion as restorative material. Because of their inferior wear resistance, pulp irritation potential, sensitivity to handling techniques and early exposure to moisture, inferior esthetics, and poor tensile strength, glass ionomers generally cannot compete with advanced composite restoratives. Certainly, they should not be used in posterior restorations. Also, they may be indicated for root decays, for repairs of defective crown margins, and for making shallow Class V restorations where esthetic considerations are of secondary concern.

F. USE AS A FISSURE SEALER

Although some practitioners apply glass ionomers in this capacity, we discourage such use. Glass ionomers compare poorly with resin-based fissure sealers, especially with the light-cured ones, in almost all relevant characteristics.

Their shortcomings in use as fissure sealers are:

- More complex handling
- Poor flow characteristics
- Difficult moisture control
- More time consuming application
- Higher probability of adhesive or structural failure
- Poor wear resistance

PROPERTIES OF THE CURED MATERIAL

Compressive Strength	102 MPa (1040 kg/cm²; 14,800 psi)
Diametral Tensile Strength	9.5 MPa (97 kg/cm²; 1378 psi)
Solubility	0.9%
Film Thickness	24 µm
Working time at 23°C (73°F)	minimum 140 seconds
Setting Time at 23°C (73°F)	maximum 7 minutes

INSTRUCTIONS FOR USE:**GENERAL COMMENTS**

The working and setting times, as well as the properties of the cured glass ionomer, depend, to a large degree, on the powder/liquid ratio and, to a lesser degree, on the technique of mixing. Therefore, the instructions given below should be followed carefully. Moreover, the storage conditions of the powder (especially the exposure of the powder to moisture) may also have an effect on the performance of the material.

The working and setting times given above are for an ambient temperature of 23°C (73°F). At higher temperatures, the working and setting times will be shortened; conversely, at lower temperatures, more working time will be available. Excess powder in the mix will result in a shorter working time.

PREPARATION OF THE MIX

1. Shake the powder well before dispensing.
2. Dispense 2 leveled scoops of powder on a glass or plastic mixing pad. Do not compress the powder in the scoop. Immediately replace the lid on the powder container.
3. Dispense, next to the powder on a mixing pad:

from 60cc bottle:	3 drops of liquid, or
from 15cc bottle:	4 drops of liquid

IMPORTANT: Hold the bottle vertically when dispensing and dispense the drops very slowly in order to avoid air entrapment and to assure reproducible drop weight. The dispensing of powder and liquid is not very precise. The clinician should judge if the consistency of the mix is to his satisfaction and add more powder or liquid if it appears too thin or too thick. Too thin a consistency may result in extended setting time and inferior properties; a thick consistency, as long as it is acceptable from the point of handling, will result in a shortened setting time, better mechanical properties and better resistance to oral fluids.

4. Using a small plastic spatula, incrementally introduce the powder into the liquid. Each new portion of the powder should be introduced only after the preceding portion is well dispersed. The mixing should be completed in less than one minute, preferably in 30 to 40 seconds.
5. Place the material, without delay, in a conventional manner. Remove the excess. Keep the area dry for 10 minutes. In order to achieve maximum strength, glass ionomer surfaces should be protected from outside moisture for 30 minutes. This may be accomplished with most fast drying dental varnishes applied on the accessible areas of the cement surface. Varnishes specifically developed for protecting glass ionomers, such as *Glasion*® Varnish (Cat. No. 51-025), are preferred.

STORAGE AND SHELF-LIFE

Store at temperatures not exceeding 75°F (24°C). When stored under such conditions, the material has a shelf-life of 3 years.

TO ORDER COMPONENTS

Item:	Catalog No.:	Item:	Catalog No.:
Glasion® Powder		Glasion® Liquid	
25g	50-021	15cc	50-022
100g	51-021	60cc	51-022

For technical information, call or write:



Quality Management System Certified to

ISO 9001 and ISO 13485

CE Marked Products

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