

## ■Related Products of Super-Bond

(Sold separately)

### ●Quick Monomer

Optional monomer

### ●Polymer

(Clear, Esthetic, Ivory, Opaque Ivory, Opaque Pink, Brush-dip Clear, Bulk-mix Clear, Bulk-mix Clear, Bulk-mix Esthetic, Bulk-mix Radiopaque, L-Type Clear, L-Type Esthetic and L-Type Radiopaque)

Optional polymer powders

### ●Super-Bond Universal Ceramic Primer

Adhesive primer for ceramic/zirconia

### ●Porcelain Liner M

Adhesive primer for porcelain

### ●V-PRIMER

Adhesive primer for precious metal alloys

### ●Super-Bond SEP

Water Soluble release agent

## ■Accessories for Super-Bond

(Sold separately)

Dispensing Dish (Ceramic)

Dispensing Stand

Dispensing Cups 40

Measuring Spoon (Standard)

Measuring Spoon (Small)

Measuring Spoon (Large)

Brush Handle (Straight)

Brush Handle (Bent)

Brush Tips (Bulk-mix)

Brush Tips (Brush-dip S)

Brush Tips (Brush-dip L)

Brush Tips (Brush-dip LL)

Needle Tips (23G) 50 pcs and Needle Cap (Red) 2 pcs

Needle Tips (23G) 50 pcs and Needle Cap (Green) 2 pcs

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### INSTRUCTIONS DATA AND REFERENCES QUESTIONS AND ANSWERS

IMPORTANT:  
READ ALL INSTRUCTIONS THOROUGHLY BEFORE USE.  
KEEP THIS LEAFLET AND REFER TO IT PERIODICALLY.

Dental Adhesive Resin Cement

**Super-Bond**

FOR DENTIST USE ONLY

# Super-Bond

Dental Adhesive Resin Cement



Made in Japan by



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## Table of Contents

Instructions	PAGE
CAUTION .....	2
1. What is Super-Bond? .....	2
2. Contents of Super-Bond Kits .....	2
3. Precautions .....	4
3-1. Safety .....	4
3-2. Precautions on Catalyst V .....	4
3-3. Storage .....	5
3-4. Disposal .....	5
3-5. To Get the Best Results with Super-Bond .....	5
4. How to use Super-Bond .....	6
Surface Preparation .....	6
BULK-MIX TECHNIQUE .....	8
BRUSH-DIP TECHNIQUE .....	8
Data and References .....	10

## CAUTION

- ① **Avoid contact**  
Avoid contact with soft tissue, skin or eyes. A rubber dam is recommended for intraoral use. Dentist should use rubber or PVC dental gloves. Contaminated skin or mucosa should be wiped off immediately with alcohol and then thoroughly rinsed with running water, otherwise symptoms such as swelling may show. If Super-Bond enters the eye, immediately rinse thoroughly with running water. The patient should be examined by an ophthalmologist. When the cured adhesive contacts soft tissue, polish the adhesive surface.
- ② **Be careful of acidity**  
As the Enamel Etchant Gel and Dentin Etchant Gel are acid, avoid contact with soft tissue, skin or eyes, and do not allow patients to swallow them while applying and washing them with water.
- ③ **Be careful of flammability**  
Catalyst V and Monomer are flammable. Do not store where they may be exposed to open flame.
- ④ **Clean spilled Catalyst V immediately with wet towels**  
The Catalyst V reacts with oxygen. If absorbed by a flammable material, it may raise the temperature enough to cause smoldering. If the Catalyst V is spilled, wipe it up immediately with a **WET(not dry)** disposable towel. Then rinse the towel to kill the catalyst thoroughly in running water.

## 1. What is Super-Bond?

Super-Bond is a self-cure dental adhesive resin cement based on MMA. It contains a high performance bonding monomer, "4-META", and a catalyst, "TBB". It shows excellent bond strength to tooth (enamel and dentin), metal\*, ceramic/zirconia\*<sup>2</sup> and dental resins.

For three decades it has been used extensively in a wide range of dental applications. During this long period it has earned an excellent reputation for pulpal safety.

Super-Bond is widely known for its formation of a sound hybrid layer (resin impregnated layer) in both enamel and dentin. This layer reinforces the tooth surface against recurrent caries and prevents the post-operative hypersensitivity.

\*1 Use V-PRIMER concurrently for precious metal alloys.

\*2 Use Super-Bond Universal Ceramic Primer concurrently for ceramic/zirconia.

## 2. Contents of Super-Bond Kits



C&B Kit

① Quick Monomer	10mL	⑨ Measuring Spoon (Standard)	1
② Catalyst V	0.7mL	⑩ Brush Handle (Bent)	1
③ Polymer (Brush-dip Clear)	3g	⑪ Brush Tips (Bulk-mix)	10
④ Polymer (Bulk-mix Radiopaque)	5g	⑫ Brush Tips (Brush-dip L)	10
⑤ Enamel Etchant Gel	3mL	⑬ Brush Tips (Brush-dip LL)	10
⑥ Dentin Etchant Gel	3mL	⑭ Needle Tips (23G)	5x2
⑦ Dispensing Stand	1	⑮ Needle Cap (Red)	1
⑧ Dispensing Cups	20	⑯ Needle Cap (Green)	1

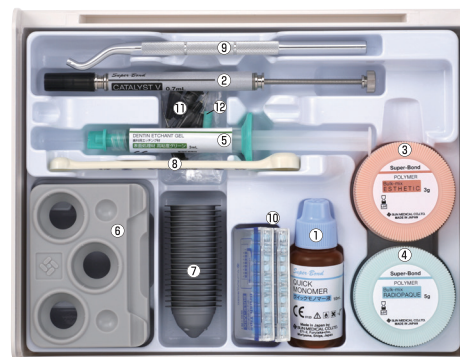
■ Attached documents:  
Instructions / Pictorial Instruction Cards



Brush-dip Kit

① Quick Monomer	10mL	⑦ Brush Handle (Bent)	1
② Catalyst V	0.7mL	⑧ Brush Tips (Brush-dip L)	10
③ Polymer (Brush-dip Clear)	3g	⑨ Brush Tips (Brush-dip LL)	10
④ Enamel Etchant Gel	3mL	⑩ Needle Tips (23G)	5
⑤ Dispensing Stand	1	⑪ Needle Cap (Red)	1
⑥ Dispensing Cups	20		

■ Attached documents:  
Instructions / Pictorial Instruction Card



Bulk-mix Kit

① Quick Monomer	10mL	⑦ Dispensing Cups	20
② Catalyst V	0.7mL	⑧ Measuring Spoon (Standard)	1
③ Polymer (Bulk-mix Esthetic)	3g	⑨ Brush Handle (Bent)	1
④ Polymer (Bulk-mix Radiopaque)	5g	⑩ Brush Tips (Bulk-mix)	10x2
⑤ Dentin Etchant Gel	3mL	⑪ Needle Tips (23G)	5
⑥ Dispensing Stand	1	⑫ Needle Cap (Green)	1

■ Attached documents:  
Instructions / Pictorial Instruction Card

### 3. Precautions

Read all instructions thoroughly before use.

#### 3-1 Safety

Please keep the following precautions for safe use.

(Regarding Catalyst V, read 3-2 additionally.)

- ① **Applications**  
Use Super-Bond only for the applications recommended in this publication.
- ② **Past history of sensitivity**  
Super-Bond should not be used by clinicians or on patients who are methacrylic monomer-sensitive.
- ③ **Symptomatic irritation**  
Cease using Super-Bond immediately, if signs of irritation such as rashes appear, and see a physician.
- ④ **Avoid contact**  
Avoid contact with soft tissue, skin or eyes. A rubber dam is recommended for intraoral use. Dentist should use rubber or PVC dental gloves. Contaminated skin or mucosa should be wiped off immediately with alcohol and then thoroughly rinsed with running water, otherwise symptoms such as swelling may appear. If Super-Bond enters the eye, immediately rinse thoroughly with running water. The patient should be examined by an ophthalmologist. When the cured adhesive contacts soft tissue, polish the adhesive surface.
- ⑤ **Be careful of acidity**  
As the Enamel Etchant Gel and Dentin Etchant Gel are acid, avoid contact with soft tissue, skin or eyes, and do not allow patients swallow them during application or rinsing.
- ⑥ **Pulp protection**  
If the preparation approaches the pulp, apply a protective base.
- ⑦ **Give care to flammability**  
Catalyst V and Monomer are flammable. Do not store where they may be exposed to open flame.

#### 3-2 Precautions on Catalyst V

Catalyst V reacts with air and water to generate heat and lose activity. Please abide by the following.

- ① **Storage conditions**  
Avoid high temperature, high humidity and direct sunlight. The repeated temperature changes may shorten the Catalyst V's shelf-life by causing the syringe to aspirate air.  
\*After a long storage, the first drop of the Catalyst V may be inactive, though the rest of the material remains active.  
\*The syringe is made of glass, therefore it must be handled with care to prevent shock, dropping, and other physical damage.
- ② **Cap closure**  
The cap simply slides on and off. Recap the syringe immediately after each use. Air (oxygen and humidity) deactivates the Catalyst V. Do not leave the cap off during the bonding procedure.
- ③ **Screwing**  
If the Catalyst V does not come out of the syringe because of the tight screw, do not try too hard to turn it. The content may splash as the syringe breaks.
- ④ **After use**  
Unscrew the male-screw two turns counter-clockwise after each use to relieve pressure on the Catalyst V. (Pressure buildup can cause leakage of the Catalyst V or a crack of the syringe.)
- ⑤ **Clean spilled Catalyst V immediately with wet towels**  
The Catalyst V reacts with oxygen. If absorbed by a flammable material, it may raise the temperature enough to cause smoldering. If the Catalyst V is spilled, wipe it up immediately with a **WET(not dry)** disposable towel. Then rinse the towel to kill the Catalyst V thoroughly in running water.
- ⑥ **Cleaning of the tip of the syringe**  
Wipe the tip of the syringe with a dry gauze after each use to prevent residue buildup. Then rinse the gauze with water to kill any remaining activity. Buildup of the residue may prevent the cap from seating properly.

#### 3-3 Storage

Please take the following precautions to maintain the quality.

- ① **Storage conditions**  
As in the case of the Catalyst V, store the Monomer, Polymer, Enamel Etchant Gel and Dentin Etchant Gel in a cool, dark location. High temperature, high humidity and direct sunlight will shorten their shelf-life.
- ② **Volatility**  
Monomer is highly volatile. Recap the bottle immediately.
- ③ **Contamination**  
Do not mix the bottle caps.
- ④ **Dispensing Cups and Brush Tips disposal**  
Both Dispensing Cups and Brush Tips are for one-time use. Dispose of them after use.

#### 3-4 Disposal

Dispose of empty containers, etc. in accordance with local regulations.

#### 3-5 To Get the Best Results with Super-Bond

- ① **Create and maintain a clean surface**  
Oil, blood, saliva and biofilm will lower the bond strength. Clean the tooth and prosthesis thoroughly before cementing. After cleaning, take care to avoid re-contamination.
- ② **Dry the surfaces and prevent moisture contamination**  
After cleaning, dry the surface adequately. A rubber dam is highly recommended, as it will reduce the chance of contamination by saliva, humid breath or blood.
- ③ **Avoid eugenol-containing bases and cements**  
Eugenol is a polymerization inhibitor. Therefore, eugenol-contained bases and cements should not be used with resin cements. To avoid cross-contamination, reserve a mixing dish exclusively for Super-Bond. Do not use the same mixing dish for other adhesives.
- ④ **Time constraints**  
Super-Bond's working and setting times are very different from those of traditional cements. Follow the instructions carefully to get the best results.
- ⑤ **Do not re-use Polymer**  
After using Super-Bond in the Brush-dip technique, dispose of any excess Polymer left in the Dispensing dish. Do not return it into the container, as it has become contaminated with the Monomer.
- ⑥ **Prosthesis Design**  
To avoid stress concentration which encourages debonding regardless of the actual bond strength, design a prosthesis, such as wings of a bonded bridge, without thin unsupported area, which may flex during mastication.

*As in any dental treatment, the patient's individual constitution and the unique requirements of clinical case at hand must be considered before selecting materials and conditions for use.*

## 4 How to use Super-Bond

Super-Bond can be used either with the Bulk-mix technique or the Brush-dip technique. Choose the appropriate technique by referring to the table below.

### Comparison of Techniques

	Bulk-mix technique	Brush-dip technique
<b>Outline of technique</b>	Polymer powder is mixed directly to the activated liquid*.	The powder/liquid ball is formed at the tip of a brush by dipping the tip first into the activated liquid* and then touching the Polymer powder.
<b>Comparison of the two techniques</b>	Use the powder/liquid mixture immediately.	The activated liquid must be used up within 5 minutes.
	Applicable to comparatively wide area.	Applicable to comparatively narrow area only.
	As the powder/liquid ratio is lower than that of Brush-dip technique, the working time is comparatively long but the curing is slow.	As the powder/liquid ratio is higher than that of Bulk-mix technique, the working time of mixed ball is comparatively short and the curing is fast.

\*Mixture of 4 drops of Monomer and 1 drop of Catalyst V

## Surface Preparation

It is essential that all surfaces to be bonded with Super-Bond should be properly prepared. Preparation varies depending on the nature of the materials.

### Tooth Surface

#### Moisture control

Isolation by rubber dam or cotton roll is recommended.  
\*Remove scales beforehand

#### Cleaning

Remove contaminants and stains using a polishing brush and oil-free, fluoride-free pumice. Rinse thoroughly and dry.

#### Surface treatment

Apply the appropriate Etchant directly from the syringe.

#### Washing and drying

Rinse thoroughly with water and dry.

#### Treatment time

Etchant	Dentin Etchant Gel	Enamel Etchant Gel
Dentin	5-10 sec	—
Enamel	30-60 sec	30 sec

Do not use Enamel Etchant Gel on dentin.  
Alternately, enamel may be prepared with Dentin Etchant Gel for 30-60 seconds.

### Ceramic/Zirconia Surface

#### Cleaning

#### Washing and drying

#### Application of Super-Bond Universal Ceramic Primer

\*Super-Bond Universal Ceramic Primer is not available in some countries.  
In that case, use Porcelain Liner M for porcelain (not for zirconia) according to the instruction for use.

### Metal Surface

#### Cleaning

#### Sandblasting

#### Protection of adjacent surfaces

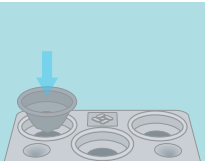
#### Application of V-PRIMER

4. How to use Super-Bond

Operation Steps (Contd.)

BULK-MIX TECHNIQUE

Preparation of Dispensing Stand  
Place the Dispensing Cups



Preparation of the Activated Liquid  
Dispensing the Monomer



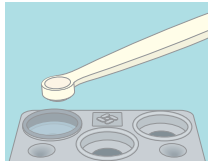
Hold the Monomer bottle vertical, and dispense the proper number of drops into a Dispensing Cup.

Dispensing the Catalyst V



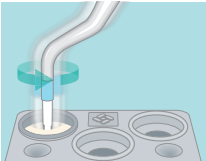
Hold the Catalyst V syringe vertical, and turn the screw to dispense the proper number of drops to the Monomer. Stir lightly with a brush. This mixture is called "activated liquid"

Mixing the Polymer



Using the supplied measuring spoon, add the Polymer powder to the activated liquid. Stir lightly with a brush.

Application of the Adhesive



Immediately after mixing, use a brush to apply the cement to the surface being bonded.

Seating the Restoration

Insert the restoration immediately. After confirming that it is completely seated, hold in position until the cement sets.  
\*The curing time varies with temperature and the type of Polymer. (See Table 1.)

Post Treatment

Remove the excess cement. To facilitate this, protect beforehand unbonded surface properly and remove the excess resin timely.

Mixing ratio

Monomer	Catalyst V	Polymer
4 drops	1 drop	1 small cup of Measuring Spoon
8 drops	2 drops	1 large cup of Measuring Spoon

**Key points to achieve good seating**

**Work quickly, and seat the restoration before the mixture begins to gel.**

- ① The recommended temperature while using Super-Bond is below 25°C.
- ② Mix Super-Bond at the last moment before bonding.
- ③ If the temperature exceeds 25°C, use the pre-cooled Dispensing Dish (Ceramic), which is sold separately.

BRUSH-DIP TECHNIQUE

Dispensing the Polymer



Dispense the appropriate amount of Polymer powder into a Dispensing Cup.

Preparation of the Activated Liquid  
Dispensing the Monomer



Hold the Monomer bottle vertical, and dispense the appropriate number of drops into another Dispensing Cup.

Dispensing the Catalyst V



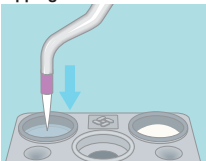
Hold the Catalyst V syringe vertical, and turn the screw to dispense the proper number of drops into the Monomer. Stir lightly with a brush. This mixture is called "activated liquid"

Application of the Activated Liquid

Brush the liquid onto the surface to be bonded.  
\*The activated liquid decomposes gradually and loses activity. Use it within 5 min. after preparation.

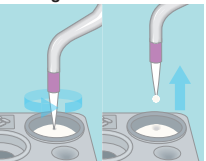
Brush-dip Procedure

Dipping the brush



Dip the Brush Tip (for Brush-dip) into the activated liquid.  
\*When you repeat the procedure, clean up the brush with gauze before you dip it.

Forming the ball



Touch the brush to the Polymer powder in the Dispensing Cup. A small ball of powder will be picked up on the wet tip of the brush.

Applying the ball

Brush the powder ball onto the pre-wet surface being bonded. As soon as it touches the surface, the powder will spread out to create a creamy, homogeneous layer. If necessary, repeat the procedure until the entire surface is covered with the cement.

Seating the Restoration

Insert the restoration immediately. After confirming that it is completely seated, hold in position until the cement sets.  
\*The curing time varies with temperature and the type of Polymer. (See Table 2.)

Post Treatment

Remove the excess cement. To facilitate this, protect adjacent surfaces you will not be bonding, and remove the excess resin before it sets.

Mixing ratio

Monomer	Catalyst V
4 drops	1 drop
8 drops	2 drops

## Data and References

**Table 1 : Effect of Polymer/Monomer on Working Time and Curing Time in Bulk-mix Technique**

Polymer		Working Time (23°C)*1 (sec.)		Working Time (16°C)*1 (sec.)		Curing Time (37°C)*2 (min.)	
		Monomer	Quick Monomer	Monomer	Quick Monomer	Monomer	Quick Monomer
Bulk-mix Type	Clear	120		—	—	13	8
	Esthetic						
	Radiopaque	150		—	—	14	9
Normal Type	Clear	—	—	70		12.5	6
	Esthetic						
	Ivory						
	Opaque Ivory	—	—	110		13.5	8
	Opaque Pink						

\*1 Available time before threading starts (namely, in slurry or sol state) at 23°C/16°C

\*2 Time to wait before occlusion

**Table 2 : Polymer Types and their Curing Times in Brush-dip Technique**

Polymer		Curing Time (37°C) (min.)	
		Monomer	Quick Monomer
Brush-dip Type	Clear	10	5
Normal Type	Clear	11	5
	Esthetic		
	Ivory		
	Opaque Ivory		7
	Opaque Pink		

