

Made in USA

**Instructions**  
**ACORN**  
**NANO-MICRO HYBRID**  
**VISIBLE LIGHT-CURED COMPOSITE RESTORATIVE**  
**AND DENTIN/ENAMEL ONE STEP LIGHT-CURED BONDING AGENT**

**SUITABLE FOR**

Class I, II, III, IV and V restorations. Fabrication of extraoral tempered inlays and onlays  
by direct or indirect method. Fabrication of extraoral tempered custom made veneers

**CONTAINS**

**Syringe Operatory Kit**

Shade A-1	4.5 g
Shade B-2	4.5 g
Shade A-2	4.5 g
Shade A-3	4.5 g
Shade A-4	4.5 g
Shade B-3	4.5 g
Shade C-2	4.5 g
Shade D-3	4.5 g
Z-Bond Bonding Agent	7 cc
Enamel Conditioner	12 g
Accessories and Instructions	

**Single Dose Capsules Kit**

Shade A-1	10x.25 g
Shade B-2	10x.25 g
Shade A-2	10x.25 g
Shade A-3	10x.25 g
Shade A-4	10x.25 g
Shade B-3	10x.25 g
Shade C-2	10x.25 g
Shade D-3	10x.25 g
Z-Bond Bonding Agent	7 cc
Enamel Conditioner	12 g
Accessories and Instructions	

**THE FOLLOWING ACORN SHADES AVAILABLE SEPARATELY**

Acorn Shade	B-1
Acorn Shade	C-3
Acorn	Incisal

**DENT ZAR, INC.**

**Dent Zar, Inc.**  
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### **OUTSTANDING FEATURES OF THE MATERIAL**

- ✚ A highly polishable, photocuring, nano-micro hybrid composite for anterior and posterior restorations.
- ✚ High nano-micro hybrid filler content contributes to low shrinkage, low water sorption, low coefficient of thermal expansion and good wear and scratch resistance.
- ✚ The total filler load is 71%. The total filler volume is 56.51%.
- ✚ Excellent x-ray opacity for future diagnosis
- ✚ Superior esthetics due to a well-balanced opacity, and availability of multiple shades.
- ✚ Outstanding color stability.
- ✚ Excellent marginal integrity.
- ✚ The shelf life is 3 years when stored at 23°C (74° F). Cool storage prolongs shelf life.
- ✚ Does not stick to the end of the insertion instrument.
- ✚ Light-cure hydrophilic, one step, Dentin/Enamel bonding agent is supplied in the kit in order to provide optimal marginal seal.

### **PROPERTIES OF THE MATERIAL**

Acorn is a light-cure, nano-micro hybrid which is based on BIS-GMA resin and inorganic filler particles of 0.007-0.70 microns.

The total filler load is 71%. The total filler volume is 56.51%.

### **PHYSICAL DATA**

Depth of cure	2.6 mm
Flexural strength	126 MPa
Diametral tensile strength	59 Mpa
Compressive strength	290 Mpa
Shrinkage stress	1,7 Mpa
Volumetric shrinkage	2,3%
Biocompatibility	Excellent
Visual opacity	45%
Water sorption	15 mg/μm <sup>3</sup>
Water solubility	0,2 mg/μm <sup>3</sup>
Radiopacity	Strong
Polishability	High gloss

### **CURING OF ACORN COMPOSITE**

Acorn cures to the depth of 2.90 mm. To minimize the effects of polymerization shrinkage, curing in layers is recommended especially, if the restoration is more than 2.5 mm deep.

### **ADDITIONAL NOTES**

- ✚ Do not use any resin to adjust viscosity of composite restorative material.
- ✚ Do not store the composite material in proximity to eugenol containing products, nor let the composite come into contact with materials containing eugenol. Eugenol can impair the hardening of the composite and cause discoloration.
- ✚ Contact of resin pastes with skin should be avoided, especially by anyone known to have resin allergies.

## CLINICAL PROCEDURES

### CAVITY PREPARATION

- + Tooth should be cleaned with non-fluoridated prophylaxis-paste.
- + Shade selection should take place when teeth are still wet, thus having their natural appearance.

#### Anterior

Class III, IV and V adhesive should be done with enamel margin beveling.

#### Posterior

- + Protect adjacent teeth by wedging with wooden wedges for initial treatment.  
Use a tooth conserving preparation. For a secondary treatment remove all old restorations completely.
- + Isolation  
Rubber dam is recommended.
- + Base lining  
Only with deep preparations adjacent to the pulp, a thin layer of Calcium Hydroxide should be placed.  
With very deep and extended cavities a build-up of a base lining with glass-ionomer cement is recommended.
- + Matrix, wedges  
Remove wooden wedges and protect adjacent teeth with a matrix band. In distal, place a translucent matrix band and wedge with wooden or light-reflecting wedges.

### ACID ETCHING

#### Enamel

Etch the enamel surrounding the cavity with etchant. Rinse and dry. Or, skip etching and use Dent Zar's **Z-Bond-one step light cure self-etching dentin/enamel bonding agent**. *Etching is necessary on uncut enamel.* (See Z-Bond-one step light-cure self-etching dentin/enamel bonding agent instructions.)

Wash and dry. Place restorative material with a tapping movement and cure.

#### Dentin

No treatment is needed if using Dent Zar's Z-Bond-one step light-cure self-etching dentin/enamel bonding agent.

### APPLICATION OF THE Z-BOND BONDING AGENT

Please see Z-Bond instructions.

### BUILD-UP OF THE RESTORATION WITH ACORN

Due to polymerization shrinkage of composites, all composite restorations must be built up in the layering technique. Due to oxygen inhibition a thin, unpolymerized layer remains on the surface, which is called the dispersion layer. This layer is mandatory for the bond of individual layers and may not be destroyed by touching or influence of moisture.

#### Anterior

Place Acorn into the cavity and adapt to the cavity walls.

For the convenience of handling, the use of the teflon instruments for placing the restorative into the cavity is recommended. Place the restorative using short tapping strokes. Avoid spatulating.

#### Posterior

Initially place the gingiva proximal restoration parts in layers (max 2.5 mm).

Thereafter, complete the occlusal aspects. Again polymerize each layer separately. When lumen wedges are used, irradiation takes place initially from the side through the lumen wedges after the interproximal step is adapted.

## **HELPFUL HINTS**

### **TRIMMING, FINISHING AND POLISHING**

For trimming remove matrix band and wedges. Contour of the restoration and the removal of excessive material is done with fine and superfine diamond burs. Flexible discs, polishing strips or silicone polishers together with composite polishing pastes are used for polishing. High gloss surfaces comparable to microfill composites are attainable with Acorn.

### **FLUORIDATION**

It is recommended to complete a restorative measure with fluoridation of the treated area.

### **INLAY/ONLAY TECHNIQUE**

It is mandatory to read the comprehensive instructions on the inlay technique prior to beginning. The build-up of an inlay restoration with the direct method starts after the isolation of the cavity; with the indirect method, after the isolation of the plaster model with Insulating-Gel; the above-mentioned layering technique must be followed in both cases. The in-mouth pre-cured inlay restoration is removed from the cavity with an Inlay pin and tempered in a Translux Lightbox, a Dentacolor XS or a Unilux AC unit.

Inlays are luted with adhesive cement.

### **STORAGE**

The shelf life is 2 years when stored at 23°C (74°F). Cool storage prolongs shelf life. Keep syringes tightly capped between uses.

**All kit components, accessories and auxiliaries are available separately.**

Revision #2. Revised on 1-5-15

## MATERIAL SAFETY DATA SHEET

U.S. DEPARTMENT OF LABOR

### ACORN NANO-MICRO HYBRID VISIBLE LIGHT-CURED COMPOSITE RESTORATIVE

#### SECTION I—IDENTIFICATION

**Chemical Name:** Bisphenol A Diglycidyl Methacrylate (CAS #001565-94-), Triethylene Glycol Dimethacrylate (CAS #109-16-0) Sodium Fluoride (CAS #7681-49-4) in inorganic filler (CAS #65997-18-4)

**Trade Name:** Acorn-Nano-Micro Hybrid Visible Light-Cured Composite Restorative.

**Dent Zar, Inc.**

**19643 Trull Brook Drive**

**Tarzana, CA 91356**

**Phone: (800) 444-1241, Outside U.S.-818-857-3010, Fax: (818-857-3010)**

#### SECTION II—HAZARDOUS INGREDIENTS

Bisphenol A Diglycidyl Methacrylate and Triethylene Glycol Dimethacrylate.

**TLV:** Not available.

#### SECTION III—PHYSICAL DATA

**Boiling Point:** N/A

**Solubility in Water:** Negligible

**Vapor Pressure:** (mm Hg): N/A

**Specific Gravity:** N/A

**Vapor Density (Air=1):** N/A

**Evaporation Rate:** N/A

**Percentage Volatile by Volume:** N/A

**Appearance and Odor:** Thick paste in various shades with faint resin odor.

#### SECTION IV—FIRE & EXPLOSION HAZARD DATA

**Flash Point:** 240°F

**Extinguishing Media:** Foam, carbon dioxide or dry chemical

**Unusual Fire and Explosion Hazards:** None

#### SECTION V— REACTIVITY DATA

**Stability:** Stable

**Conditions to Avoid:** High Temperature, prolonged storage above 35°C, Direct Sunlight, High Intensity Light.

**Incompatibility:** Strong Acid, Peroxides and other oxidizing agent.

**Hazardous Decomposition Products:** Carbon Monoxide and Carbon Dioxide, low molecular weight Hydrocarbons and organic acids.

**Hazardous Polymerization:** May Occur

**Conditions to Avoid:** Light, open flames, contamination, and prolonged storage above 35° (100°F.)

#### SECTION VI— HEALTH HAZARD DATA

**Skin, Effects of Overexposure:** May cause irritation

**Skin, First Aid Procedures:** Wash with soap and water. If irritation persists, get medical attention.

**Eyes, Effects of Overexposure:** May cause irritation. Flush promptly with large amount of water for 15 minutes and get medical attention.

**Inhalation, Effects of Overexposure:** A very large amount of uncured material can cause dyspepsia, nausea and vertigo.

**Ingestion, First Aid Procedures:** Consult a physician promptly.

#### SECTION VII— SPILL OR LEAK PROCEDURES

**Steps to be taken in case material is released or spilled:** Absorb with inert materials such as dry sand and place in closed container as solid waste.

**Waste Disposal Method:** This disposal method is a recommendation only. Be sure to dispose of materials in full accordance with all local, state and federal regulations applicable.

#### SECTION VIII— SPECIAL PROTECTION

**Respiratory Protection, Ventilation, Protective Gloves, Eye Protection, and other protective equipment:** Not required under normal condition of use.

#### SECTION IX— SPECIAL PRECAUTIONS

**Precaution to be taken in Handling and Storing:** Keep materials capped at all times after use. Store at room temperature.

**Other precautions:** We recommend obtaining a copy of the "Director of Poison Control Centers." To obtain a copy write to: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

**The information contained herein is believed to be accurate and is offered in good faith for the user's consideration and investigation. No warranty either expressed or implied is made for the completeness or accuracy of this information.**