

PULPDENT®

DenTASTIC®

R_x only

All Purpose Dental Adhesive System

Hydrophilic • Dual Cure

For bonding to dentin,
enamel, porcelain, resins,
precious and non-precious
metals and amalgam.



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0459

PULPDENT Corporation

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A. Product Description

DenTASTIC is user friendly and is designed to take the mystery out of dental adhesives. It is a complete, reliable and easy to understand system for bonding to all tooth surfaces and restorative materials.

The DenTASTIC Adhesive System is the result of three decades of research in dental adhesive technology. The research and ensuing patents are fully documented by a substantial volume of published literature.* A complete bibliography is available upon request.

DenTASTIC uses the new PMGDM with the magnesium salt of NTG-GMA. Research shows this superior to the older PMDM formulas in shear bond strength© and shelf life.

Pulpdent manufactures DenTASTIC under license and has enhanced this patented technology with its own proprietary adhesive chemistry.

For technical assistance call Pulpdent toll free (800) 343-4342 or (617) 926-6666.

* BOWEN, R.L., inventor, patents assigned to American Dental Association Health Foundation. U.S. Patent Nos. 4,514,527; 4,521,550; 4,588,756; 4,659,751; 5,320,886.

* BOWEN, R.L., and MARJENHOFF, W. A. (1992): *Development of an Adhesive Bonding System, Operative Dentistry, Supplement 5, 75-80.*

♦ VENZ, S., and DICKENS, B.: *Modified Surface-active Monomers for Adhesive Bonding to Dentin, Journal of Dental Research, 72(3): 582-586, March, 1993.*

B. Basic Rules

1. Etch or sandblast surfaces, as indicated.*
2. Prime dentin and enamel with DenTASTIC Adhesive Primer A + B.
3. Prime metals with DenTASTIC Adhesive Primer C + B.
4. Prime porcelain with Silane Bond Enhancer.
5. Place Unfilled Resin Bonding Agent over DenTASTIC and Silane.©
6. Place restorative composite or resin cement over Unfilled Resin.

* *Tin plate high precious alloys for superior results.*

♦ *When using an opaquer or when bonding new amalgam, Unfilled Resin Bonding Agent is not required.*

Procedure 1. Dentin/Enamel Bonding

1. Isolation and Preparation: Isolate treatment area to achieve a clean, dry field. Prepare tooth for restoration. Place appropriate base/liner in deep cavities, if desired.
2. Etching: Apply Etch-All 10% phosphoric acid gel first to enamel and then to dentin and etch for 30 seconds while agitating gently. Rinse with copious amounts of water. Remove excess water from

surface, but **DO NOT DRY DENTIN**. (A cotton pellet may be used for this purpose.) DenTASTIC Adhesive Primer is a hydrophilic monomer which is designed to work best in the moist dentin environment. All of the popular dentin etchants (nitric acid, maleic acid and polyacrylic acid) work equally well with DenTASTIC and provide the same excellent results. Keep this surface clean. **AVOID SALIVA CONTAMINATION**.

3. Adhesive Primer: Mix equal amounts of DenTASTIC Dentin/Enamel Initiator Part A and Universal Base Part B immediately before use. Paint 3 successive coats of this mixture on the dentin and enamel surface waiting 3-5 seconds between coats. **DO NOT DRY BETWEEN COATS**. After the last coat, dry the surface for a few seconds with clean, uncontaminated air. The surface should appear glossy; if not, apply additional coats until glossy surface appears.
4. Unfilled Resin Bonding Agent: **FOR LIGHT CURE RESTORATIONS** use light activated Unfilled Resin Base Part 1 only. **FOR SELF-CURE OR DUAL CURE RESTORATIONS** mix equal amounts of Unfilled Resin Base Part 1 and Catalyst Part 2. Paint a thin layer over the glossy adhesive surface. Wipe resin off brush and immediately use brush to thin the resin layer. Light curing is not required; however, testing shows increased bond strengths when this layer is light cured.
5. Restorative Composite/Resin Cement: Place restorative composite or resin cement directly over the Unfilled Resin. Light cure if appropriate.

Note: *To desensitize root surfaces, etch, apply 3-5 coats Primers A + B and light cure. Then either apply 3-5 additional coats of Primers A + B and light cure, or apply Unfilled Resin Bonding Agent and light cure.*

Procedure 2. Bonded Porcelain Restorations and Porcelain Repairs

1. Porcelain Etching: For porcelain repairs, remove loose porcelain, if any, and contour as necessary. For all bonded porcelain restorations and porcelain repairs, etch porcelain surfaces with Pulpdent Porcelain Etch Gel for two minutes. Be sure to place rubber dam for intraoral use. Rinse well using high volume aspirator. Dry porcelain surface completely.
2. Silane: Place Pulpdent Silane Bond Enhancer on the etched porcelain surface. Allow silane to air dry or dry with a gentle stream of clean air. **KEEP THIS SURFACE UNCONTAMINATED AND DRY. FOR PORCELAIN REPAIRS** continue with step 6. **FOR BONDED PORCELAIN RESTORATIONS** continue with step 3.
3. Tooth Isolation and Preparation: When bonding **PORCELAIN RESTORATIONS** (veneers, inlays, onlays and crowns) **TO DENTIN/ENAMEL**, isolate treatment area to achieve a clean, dry field. Prepare tooth for restoration. Place appropriate base/liner in deep cavities, if desired.

4. Etching: Apply Etch-All 10% phosphoric acid gel first to enamel and then to dentin and etch for 30 seconds while agitating gently. Rinse with copious amounts of water. Remove excess water from surface, but **DO NOT DRY DENTIN**. (A cotton pellet may be used for this purpose.) DenTASTIC Adhesive Primer is a hydrophilic monomer which is designed to work best in the moist dentin environment. All the popular dentin etchants (nitric acid, maleic acid and polyacrylic acid) work equally well with DenTASTIC and provide the same excellent results.
5. Adhesive Primer: Mix equal amounts of DenTASTIC Dentin/Enamel Initiator Part A and Universal Base Part B immediately before use. Paint five successive coats of this mixture on the dentin and enamel surface. **DO NOT DRY BETWEEN COATS**. After the last coat, dry the surface for a few seconds with a gentle stream of clean, uncontaminated air. The surface should appear glossy; if not, apply additional coats until glossy surface appears.
6. Unfilled Resin Bonding Agent: **FOR LIGHT CURE RESTORATIONS** use light activated Unfilled Resin Base Part 1 only. **FOR SELF-CURE OR DUAL CURE RESTORATIONS** mix equal amounts of Unfilled Resin Base Part 1 and Catalyst Part 2. Paint a thin layer of Unfilled Resin Bonding Agent on the silanated porcelain surface and, when bonding to dentin/enamel, on the glossy adhesive tooth surface, also. Immediately thin this layer with a gentle stream of air. **DO NOT CURE THE UNFILLED RESIN BONDING AGENT** when bonding veneers, crowns, inlays or onlays. Not curing allows the Unfilled Resin to thin and spread out when you seat the restoration.
7. Restorative Composite/Resin Cement: **FOR PORCELAIN REPAIRS**, place restorative composite on the porcelain surface directly over the Unfilled Resin Bonding Agent. Use a matrix when appropriate. **FOR BONDED PORCELAIN RESTORATIONS** (veneers, inlays, onlays and crowns), place resin cement on the porcelain surface directly over the Unfilled Resin Bonding Agent and carefully seat restoration onto the adhesively prepared tooth. When light curing thin bonded porcelain restorations (veneers), light cure for two to three minutes. Light cure thick bonded porcelain restorations (inlays, onlays, crowns) for three minutes or more.

Procedure 3. Repair of Porcelain Fractured From Metal Framework

1. Surface Preparation: Remove loose or fractured porcelain with a diamond bur and bevel porcelain edge. For best results, sandblast the exposed metal surface with 50 micron aluminum oxide using an intraoral sandblaster. If sandblaster is not available, roughen the metal surface lightly with a diamond bur. Wash and dry the metal surface thoroughly.
2. Adhesive Primer: Mix equal amounts of DenTASTIC Metal Initiator Part C and Universal Base Part B immediately before use. Paint two successive coats of this mixture over the prepared metal surface

and adjacent porcelain. Allow the solvent to evaporate for 10 seconds before drying with a gentle stream of air for 3-5 seconds.

3. Unfilled Resin Bonding Agent: **FOR LIGHT CURE RESTORATIONS** use light activated Unfilled Resin Base Part 1 only. **FOR SELF-CURE OR DUAL CURE RESTORATIONS** mix equal amounts of Unfilled Resin Base Part 1 and Catalyst Part 2. Paint a thin layer over the adhesively prepared metal and adjacent porcelain surface, and thin this layer immediately with a stream of air. Light curing this layer is optional. An opa-quer may be substituted for the Unfilled Resin Bonding Agent, if required.
4. Restorative Composite: Place restorative composite over the Unfilled Resin Bonding Agent using a matrix. Light cure, if appropriate, contour and polish.

Procedure 4. Bonding to Precious and Non-Precious Metals and Porcelain Fusing Alloys

1. Metal Preparation: For best results, sandblast the metal surface on which the DenTASTIC Adhesive Primer will be placed with 50 micron aluminum oxide. If sandblaster is not available, roughen the metal surface lightly with a diamond bur. The sandblasted or roughened surfaces of **HIGH PRECIOUS ALLOYS** should be tin plated with an appropriate brush plating instrument for superior results. Rinse and dry the metal or plated surface thoroughly.
2. Tooth Isolation and Preparation: When bonding **METAL TO DENTIN/ENAMEL** abutment, isolate treatment area to achieve a clean, dry field. Prepare tooth for restoration. Place appropriate base/liner in deep cavities, if desired.
3. Etching: Apply Etch-All 10% phosphoric acid gel first to enamel and then to dentin and etch for 30 seconds while agitating gently. Rinse with copious amounts of water. Remove excess water from surface, but **DO NOT DRY DENTIN**. (A cotton pellet may be used for this purpose.) DenTASTIC Adhesive Primer is a hydrophilic monomer which is designed to work best in the moist dentin environment. All the popular dentin etchants (nitric acid, maleic acid and polyacrylic acid) work equally well with DenTASTIC and provide the same excellent results.
4. Dentin/Enamel Adhesive Primer: Mix equal amounts of DenTASTIC Dentin/Enamel Initiator Part A and Universal Base Part B immediately before use. Paint 3 successive coats of this mixture on the dentin and enamel surface waiting 3-5 seconds between coats. **DO NOT DRY BETWEEN COATS**. After the last coat, dry the surface for a few seconds with a gentle stream of clean, uncontaminated air. The surface should appear glossy; if not, apply additional coats until glossy surface appears.
5. Metal Adhesive Primer: Mix equal amounts of DenTASTIC Metal Initiator Part C and Universal Base Part B immediately before use. Paint two successive coats of this mixture over the prepared metal

surface and allow the solvent to evaporate for 10 seconds before drying with a gently stream of air for 3-5 seconds.

6. Unfilled Resin Bonding Agent: Mix equal amounts of Unfilled Resin Base Part 1 and Catalyst Part 2 and paint a thin layer over the adhesively prepared metal and tooth surfaces. Wipe resin off brush and immediately use brush to thin resin layer. An opaquer may be substituted for the Unfilled Resin Bonding Agent, if required.
7. Resin Cement or Restorative Composite: When bonding metal to dentin/enamel, mix the base and catalyst portions of a self-cure or dual cure resin cement and place on the unfilled resin treated surface of the metal restoration. Do not cure this layer. Quickly seat the restoration. If resin cement is dual cure, light cure to tack restoration in place, if desired, and proceed with finishing. When bonding composite to metal, place restorative composite, light cure, if appropriate, and finish.

Note: *When bonding root canal posts using resin cement, use Primers B + C on both the dentin and the post. This will retard the setting time of the resin cement.*

Procedure 5. Bonding Composite to Existing Amalgam

1. Surface Preparation: For best results, sandblast the amalgam surface to which the composite will be bonded with 50 micron aluminum oxide. If sandblaster is not available, roughen the amalgam surface lightly with a diamond bur. Rinse and dry thoroughly.
2. Adhesive Primer: Mix equal amounts of DenTASTIC Metal Initiator Part C and Universal Base Part B immediately before use. Paint two successive coats of this mixture over the prepared amalgam surface and allow the solvent to evaporate for 10 seconds before drying with a gentle stream of air for 3-5 seconds.
3. Unfilled Resin Bonding Agent: **FOR LIGHT CURE RESTORATIONS** use light activated Unfilled Resin Base Part 1 only. **FOR SELF-CURE OR DUAL CURE RESTORATIONS** mix equal amounts of Unfilled Resin Base Part 1 and Catalyst Part 2. Paint a thin layer over the adhesively prepared amalgam surface. Wipe resin off brush and immediately use brush to thin resin layer. Light curing this layer is optional. An opaquer may be substituted for the Unfilled Resin Bonding Agent, if desired.
4. Restorative Composite: Place restorative composite over the Unfilled Resin Bonding Agent. Light cure, if appropriate, contour and finish the composite.

Procedure 6. Bonding New Amalgam To Tooth Structure

1. Isolation and Preparation: Isolate treatment area to achieve a clean, dry field. Prepare the cavity conservatively. Place appropriate base/liner in deep cavities, if desired.
2. Etching: Apply Etch-All 10% phosphoric acid gel first to enamel and then to dentin and etch for 30 seconds while agitating gently. Rinse with copious amounts of water. Remove excess water from surface, but **DO NOT DRY DENTIN**. (A cotton pellet may be used for this purpose.) DenTASTIC Adhesive Primer is a hydrophilic monomer which is designed to work best in the moist dentin environment. All the popular dentin etchants (nitric acid, maleic acid and polyacrylic acid) work equally well with DenTASTIC and provide the same excellent results.
3. Adhesive Primer: Mix equal amounts of DenTASTIC Dentin/Enamel Initiator Part A and Universal Base Part B immediately before use. Paint 5 successive coats of this mixture on the dentin and enamel surface waiting 3-5 seconds between coats. **DO NOT DRY BETWEEN COATS**. After the last coat, dry the surface for a few seconds with a gentle stream of clean, uncontaminated air. The surface should appear glossy; if not, apply additional coats until glossy surface appears.
4. Resin Cement: Mix the base and catalyst portions of Pulpdent ResiLute™ or your preferred self-cure or dual cure resin cement and apply a thin layer on the glossy adhesive cavity surface. **DO NOT CURE THIS LAYER**. (Begin trituration of amalgam during this step.) Dual cure Unfilled Resin Base Part I and Catalyst Part 2 may be used instead of a self-cure or dual cure resin cement; however, research shows increased bond strengths with a partially filled resin cement which intermingles better with the amalgam and locks it into the tooth.
5. Amalgam Placement: Immediately condense the amalgam over the resin cement allowing excess cement to extrude from under the amalgam. **IMMEDIATELY** remove excess resin cement while carving the amalgam to contour.

Procedure 7. Bonding New Amalgam To Existing Amalgam

1. Amalgam Preparation: For best results, sandblast the existing amalgam surface to which the new amalgam will be bonded with 50 micron aluminum oxide. If sandblaster is not available, roughen the surface lightly with a diamond bur. Rinse and dry amalgam surface thoroughly.
2. Adhesive Primer: Mix equal amounts of DenTASTIC Metal Initiator Part C and UniversalBase Part B immediately before use. Paint two successive coats of this mixture over the existing amalgam surface and allow the solvent to evaporate for 10 seconds before drying with a gentle stream of air for 3-5 seconds.

3. Resin Cement: Mix the base and catalyst portions of a self-cure or dual cure resin cement and place a thin layer over the adhesively prepared amalgam surface. **DO NOT CURE THIS LAYER.** (Begin trituration of amalgam during this step.)
4. New Amalgam: Immediately condense the new amalgam over the resin cement allowing excess resin cement to extrude from under the amalgam. **IMMEDIATELY** remove the excess resin cement while carving the new amalgam to contour.

Note: Multi-dose syringes should either be encased in a fresh protective barrier for each patient or cleaned and disinfected between patients, as appropriate.

Material Safety Data Sheet

MSDS DenTASTIC page 1 of 3

IDENTITY

Trade Name: DenTASTIC DENTAL ADHESIVE

Chemical Description:

Part A: Mg NTG-GMA in acetone base (magnesium salt of the reaction product of N-toluene glycine and glycidyl methacrylate) and inhibitors.

Part B: PMGDM in acetone base (the reaction product of pyromellitic dianhydride with glycerol dimethacrylate), di- and tri-functional monomers and activators.

Part C: Mono- and difunctional monomers and oligomers, and activators in an acetone base.

Product Use: Dental adhesive system

SECTION I

PULPDENT Corporation

80 Oakland Street Watertown, MA 02472 USA

Phone Numbers:

24 Hour Emergency: 1-800-535-5053

Customer Service: 1-800-343-4342

1-617-926-6666

Date Prepared: March 1, 2012

SECTION II – HAZARDOUS INGREDIENTS

Ingredients	CAS RN	PEL/TLV	UN Number
Mg NTG-GMA	83418-59-1	Not established	-----
PMGDM	148019-46-9	Not established	-----
Acetone	67-64-1	TWA: 750 ppm STEL: 1000 ppm	UN 1090

Dot Hazard Classification: Class 3, PG II, Flammable Liquid

WHMIS Classification: B-2, Flammable liquid/D-2, Possible irritant or sensitizer

NFPA HMIS Rating: Health: 1 Flammability: 3 Reactivity: 2

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 56.5°C **Specific Gravity:** 0.788

Vapor Pressure: 180 mm Hg

Melting Point: -94°C **Vapor Density:** 2.0

Evaporation Rate: 6

Solubility in Water: Very soluble

Odor Threshold: 20 ppm

Appearance and Odor:

Part A: Pale yellow to amber thin liquid

Part B: Yellow liquid

Part C: Amber colored thin liquid

All with characteristic, sweet mint-like, acetone odor.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Flash Point: -18°C (0°F)

Flammable Limits: LEL: 2.5% UEL: 12.8%

Extinguishing Media: Use dry chemical, CO₂, alcohol resistant foam, water spray.

Special Fire Fighting Procedures: Use water to keep fire exposed containers cool. Firefighters should wear self-contained breathing apparatus in the positive pressure mode with a full face piece when there is a possibility of exposure to smoke, fumes, or hazardous decomposition products.

Unusual Fire and Explosion Hazards/Hazardous Products of Combustion: Heat, aging or contamination can lead to explosive polymerization.

SECTION V – REACTIVITY DATA

Stability: Stable under normal conditions of use and storage.

Conditions to avoid: Temperature >80° F/27°C, sparks and flames, ungrounded metal containers, contamination. Use promptly.

Incompatibility: Acids, bases, amines, bromines, chloroform, hydrogen peroxide, strong oxidizers, plastics, rayon, ketones, acetaldehyde.

Hazardous Decomposition Products: Thermal decomposition products may include toxic oxides of carbon.

Hazardous Polymerization: Possible

Conditions to avoid: Temperature >80°F/27°C, sparks, and flames; contamination; storing for prolonged periods of time.

SECTION VI – HEALTH HAZARD DATA

Summary of Acute Hazards: Minimal health hazard under normal conditions of use and storage, and in the quantity present in this product. May be irritating to eyes, skin or respiratory tract. In large quantities and with prolonged exposure, acetone presents a significant health hazard.

Route of Exposure Signs & Symptoms

Inhalation	May irritate nose, throat. Prolonged or repeated exposure to large quantities may cause headache, fatigue.
Eye Contact	May irritate eyes
Skin Absorption	Slightly toxic
Skin Contact	May cause dry or red skin or allergic reaction.
Ingestion	Harmful if swallowed; nervous system depressant.

LD50 (rat): 10.7 ml/kg

Summary of Chronic Hazards: Prolonged exposure to acetone in amounts greater than the TLV may cause mucous membrane irritation, fatigue, weakness, headache, hematological and central nervous system changes, conjunctivitis. Methacrylates may cause

sensitization in susceptible individuals..

Carcinogenicity: Not known to be a carcinogen

Teratogenicity, Mutagenicity, Reproductive Toxicity: None known

Special Health Effects: Prolonged exposure to acetone presents increased risk to persons with chronic respiratory or skin disease.

Emergency First Aid Procedures:

Inhalation	Move victim to fresh air. Give oxygen for difficult breathing. Seek medical care.
Eye Contact	Flush with water for at least 15+ minutes. Seek medical attention.
Ingestion	For large quantity: dilute with water, but only if person is conscious. Give activated charcoal. Seek emergency medical attention.
Skin Contact	Wash affected area thoroughly with mild soap and water. If irritation develops or persists, seek medical attention.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING & USE

Handling and Storage Precautions: Store tightly capped in original container at cool room temperature. Avoid cross-contamination between parts. Avoid temperature extremes (>80°F/27°C, <40°F/5°C), , sparks, flames, moisture and incompatible materials. Ground metal containers. Empty containers may retain residual product and should be handled appropriately.

Release or Spill: For small quantities, as in this product: Wear gloves and splash goggles. Absorb spill with inert material, such as paper towels. Place all absorbent material in closed container away from heat, sparks, and flame. Wash area of spill with soap and water.

Waste Disposal Method: Dispose in accordance with current local, state and federal regulations. Keep spills out of sewers and open bodies of water.

Other Precautions: Avoid contact with eyes, skin or clothing. Avoid breathing the vapors. Wash hands after use.

SECTION VIII – CONTROL MEASURES

Respiratory Protection: None required under normal conditions of use. For exposure >TLV, use a NIOSH-approved respirator.

Ventilation: No special ventilation is usually required. Large quantities of acetone require local exhaust.

Protective Gloves: Recommended

Eye Protection: Safety glasses or splash goggles recommended.

Other Protective Clothing or Equipment: Emergency eye wash fountain should be close-by and maintained. Dental staff should wear lab coats.

Work/Hygienic Practices: Wash hands after use.

The information presented herein is believed to be factual as it has been derived from the works of persons believed to be qualified experts. However, nothing contained in this information is to be taken as a warranty or representation for which Pulpdent Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

Material Safety Data Sheet

IDENTITY

MSDS Unfilled Resin Bonding Agent page 1 of 2

Trade Name: Dentastick Unfilled Resin Bonding Agent, Part 1 and Part 2

Chemical Description: Mono- and di-functional monomers and oligomers in resin base.

Product Use: Dental bonding agent in two parts

SECTION I

PULPDENT Corporation

80 Oakland Street Watertown, MA 02472 USA

Phone Numbers:

24 Hour Emergency: 1-800-535-5053

Customer Service: 1-800-343-4342

1-617-926-6666

Date Prepared: March 1, 2012

SECTION II – HAZARDOUS INGREDIENTS

Ingredients

Uncured methacrylate resin mixture

DOT HAZARD CLASSIFICATION:

WHMIS CLASSIFICATION:

PEL/TLV

Not established

Not regulated

D2 - Possible irritant
or sensitizer

NFPA HMIS RATING: Health: 1 Flammability: 0 Reactivity: 1

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Specific Gravity: 1.10

Vapor Pressure: <1 mm Hg

Solubility in Water: Not significant

Odor Threshold: No data available

Appearance: Part 1 (Base): Yellow, oily liquid with characteristic odor

Part 2 (Catalyst): Slightly yellow, oily liquid with characteristic odor

Odor: Mild, characteristic, resin odor.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not flammable

Flammable Limits: Not applicable

Extinguishing Media: Use water spray to keep fire-exposed containers cool. Extinguish fire with agent suitable for surrounding fire; carbon dioxide, dry chemical.

Unusual Fire and Explosion Hazards/Hazardous Products: Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide and oxides of nitrogen and silicone.

Special Fire Fighting Procedures: Wear protective clothing; use positive pressure self-contained breathing apparatus.

SECTION V – REACTIVITY DATA

Stability: Stable

Conditions to avoid: Temperature > 27°C / 80°F; intense light, especially direct sunlight

Incompatibility: None

Hazardous Decomposition Products: Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide and oxides of nitrogen and silicone.

Hazardous Polymerization: Will not occur in the quantities present in this product.

Conditions to avoid: Temperature > 27°C / 80°F; intense light, direct sunlight, cross contamination.

SECTION VI – HEALTH HAZARD DATA

Summary of Acute Hazards: Minimal health hazard

Route of Exposure **Signs & Symptoms**

Inhalation	None
Eye Contact	May cause irritation
Skin Absorption	None expected
Skin Contact	May cause irritation
Ingestion	None in the quantities present in this product.

Summary of Chronic Hazards: May be a sensitizer with prolonged or repeated contact.

Carcinogenicity: Not known to be a carcinogen

Special Health Effects: May be a sensitizer with prolonged or repeated contact.

Teratogenicity, Mutagenicity, Reproductive Toxicity: None known

Emergency First Aid Procedures:

Inhalation	Remove person to fresh air; give oxygen for difficulty breathing. Seek medical attention.
Eye Contact	Flush with running water for 15+ minutes. Consult physician for persistent irritation.
Ingestion	If large quantities are swallowed, seek emergency medical care.
Skin Contact	Remove with alcohol or orange solvent. Wash skin with water and soap.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING & USE

Handling and Storage Precautions: Keep tightly capped in original container. Store in a cool, dry, well-ventilated place. Avoid temperature extremes (>80°F/27°C, <40°F/5°C) and direct sunlight. Avoid cross contamination.

Release or Spill: Wear gloves and goggles. Absorb with inert material, such as paper towels, and transfer to covered container for disposal. Wash spill site with alcohol or orange solvent and then with detergent and water.

Waste Disposal Method: Follow all government regulations.

Other Precautions: None

SECTION VIII – CONTROL MEASURES

Respiratory Protection: None required under normal conditions of use of this product.

Ventilation: No special ventilation required under normal conditions of use of this product.

Protective Gloves: Recommended.

Eye Protection: Safety glasses are recommended

Other Protective Clothing or Equipment: Emergency eye wash fountain should be close by and maintained.

Work/Hygienic Practices: Wash hands after use.

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Material Safety Data Sheet

IDENTITY

Trade Name: Pulpdent Etch-All Dental Etching Gel

Chemical Description: 10% Phosphoric Acid in a proprietary gel base.

Product Use: Dental etchant

SECTION I

PULPDENT Corporation

80 Oakland Street Watertown, MA 02472 USA

Phone Numbers:

24 Hour Emergency: 1-800-535-5053

Customer Service: 1-800-343-4342

1-617-926-6666

Date Prepared: March 1, 2012

SECTION II – HAZARDOUS INGREDIENTS

Ingredients	CAS RN	PEL/TLV	UN Number
Phosphoric Acid	7664-38-2	1 mg/m ³ / 3 mg/m ³	UN 1805

DOT HAZARD CLASS: Class 8, Packing Group III, Corrosive material

WHMIS CLASSIFICATION: Class E - Corrosive material

NFPA HMIS Rating: Health: 3 Flammability: 0 Reactivity: 0

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 135°C **Specific Gravity:** 1.575

Melting Point: 42°C **Solubility in Water:** Complete

Appearance and Odor: Clear purple gel with characteristic odor.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not combustible

Flammable Limits: Not applicable

Unusual Fire and Explosion Hazards: Phosphoric acid may react with metals to liberate hydrogen, a flammable gas. Combustion by-products include oxides of phosphorus.

Extinguishing Media: Use water spray to cool fire-exposed containers. Extinguish fire with agent suitable for surrounding fire.

MSDS Etch-All page 1 of 3

Special Fire Fighting Procedures: Wear protective clothing and use positive pressure self-contained breathing apparatus.

Hazardous Combustion Products: Phosphoric acid may react with metals to liberate hydrogen, a flammable gas. Combustion by-products include oxides of phosphorus.

SECTION V – REACTIVITY DATA

Stability: Stable

Conditions to avoid: None

Incompatibility: Avoid contact with sulfides and sulfitess which may release toxic gases. Avoid strong alkalis because high heat of reaction may generate steam. Avoid most metals because they may react to liberate hydrogen, a flammable gas.

Hazardous Decomposition Products: Combustion by-products include oxides of phosphorus.

Hazardous Polymerization: Does not occur.

Conditions to avoid: None

SECTION VI – HEALTH HAZARD DATA

Summary of Acute Hazards: Corrosive material. Causes eye and skin burns. May not produce an immediate burning sensation upon skin contact, delaying awareness that contact has occurred.

Route of Exposure

Inhalation

Signs & Symptoms

None expected under normal conditions of use. However, if inhaled as a mist or if the material is vaporized, it can irritate the respiratory tract.

Eye Contact

Corrosive. May cause burns or irritation.

Skin Absorption

Slightly toxic

Skin Contact	Corrosive, slightly toxic. May cause burns or irritation. Burning sensation may be delayed.
Ingestion	Corrosive. May cause burns or irritation to the mouth, throat or gastrointestinal tract. Slightly toxic.

Summary of Chronic Hazards: None known

Carcinogenicity: Not known to be a carcinogen

Reproductive Toxicity, Mutagenicity, Teratogenicity, Special

Health Effects: None known

Emergency First Aid Procedures:

Inhalation	Remove person to fresh air. Seek medical attention if symptoms persist.
Eye Contact	Immediately flush with running water for 15+ minutes. Seek medical attention.
Ingestion	Dilute with water or milk. Do not induce vomiting. Seek emergency medical attention.
Skin Contact	Immediately flush with running water for 15+ minutes while removing contaminated clothing. Seek medical attention. Wash clothing before reuse

SECTION VII – PRECAUTIONS FOR SAFE HANDLING & USE

Handling and Storage Precautions: Store tightly capped in original container. Keep in a cool, dry, well-ventilated location. Avoid temperature extremes (>80°F/27°C, <40°F/5°C), direct sunlight, alkalies and metals.

Release or Spill: Wear gloves and splash goggles. Wipe up or absorb with dry paper towels. Place all material in chemical waste container for disposal. Flush spill area with water.

Waste Disposal Method: Follow all government regulations.

Other Precautions: Wash thoroughly after handling. Use with adequate ventilation. Keep container closed. Observe all safeguards with empty containers.

SECTION VIII – CONTROL MEASURES

Respiratory Protection: Not required under normal conditions of use of this product. If used in vivo, a high speed evacuation tip should be used to protect patient. When airborne limits are exceeded, a NIOSH-approved respirator with full face piece is recommended.

Ventilation: No special ventilation required under normal conditions of use of this product. For larger quantities, adequate ventilation to keep TLV below 3 mg/m³. Local mechanical exhaust ventilation recommended.

Protective Gloves: Chemically resistant gloves.

Eye Protection: Chemically resistant splash goggles.

Other Protective Clothing or Equipment: Wear long sleeves, apron or lab coat over clothing, to protect skin. If used in vivo, use rubber dam around tooth to be etched and high speed evacuator tip or other protective devices for patient. Mask all surrounding tissue. Emergency eye wash fountain should be close by and maintained.

Work/Hygienic Practices: Wash thoroughly after handling. Clean protective equipment before reuse.

The information presented herein is believed to be factual as it has been derived from the works of persons believed to be qualified experts. However, nothing contained in this information is to be taken as a warranty or representation for which Pulpdent Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.
