


Trade Name: **EMBRACE™ Product Line**

1.0 Commercial Product Name and Supplier	
1.1	<p><i>Commercial product name</i></p> <p>Embrace™ WetBond™ Class V</p> <p>Embrace™ WetBond™ First Coat</p> <p>Embrace™ Esthetic Opaquer</p> <p>Embrace™ WetBond™ Pit & Fissure Sealant</p> <p>Embrace™ WetBond™ Pit & Fissure Sealant Low Fill</p> <p>Embrace™ WetBond™ Seal-n-Shine™</p> <p>Embrace™ WetBond™ Resin Cement</p>
	<p><i>Codes</i></p> <p>EMVA2, EMVA3.5</p> <p>EMFC</p> <p>EMO1, EMO2, EMO4</p> <p>EMS, EMS3, EMSB, EMSW, EMS3W, EMSWB</p> <p>EMSWLF, EMSWLFB</p> <p>EMSNS, EMSNY</p> <p>EMCAR, EMCAR2, EMCMR, EMCMR2,</p>
1.2	Application / Use
1.2.2	SIC
1.2.3	Use Category
1.3	<p>Manufacturer</p> <p>Pulpdent Corporation</p> <p>80 Oakland Street</p> <p>Watertown, MA 02472 USA</p>
1.4	Emergency Telephone Number
1.5	Authorized European Representative
	<p>Dental material for use by dental professional only.</p> <p>851 Human health activity</p> <p>55</p> <p>Telephone: 1 617 926-6666</p> <p>Fax: 1 617 926-6262</p> <p>Email: Pulpdent@pulpdent.com</p> <p>1-800-535-5053 (24 Hour / USA)</p> <p>Advena Limited</p> <p>Tower Business Centre, 2nd Floor,</p> <p>Tower Street,</p> <p>Swatar, BKR 4013 Malta</p> <p>Advena Limited</p> <p>Pure Offices, Plato Close</p> <p>Warwick, CV34 6WE United Kingdom</p>
	UK Responsible Person

2.0 Hazards Identification																					
2.1	Classification																				
2.1.1	Classification according to Regulation (EC) No 1272/2008 [CLP]	<table border="1"> <thead> <tr> <th>Hazard Class</th> <th>Hazard Category</th> <th>Hazard Statement</th> </tr> </thead> <tbody> <tr> <td>Acute toxicity</td> <td>4</td> <td>H302</td> </tr> <tr> <td>Eye irritation</td> <td>2</td> <td>H319</td> </tr> <tr> <td>STOT SE</td> <td>3</td> <td>H335</td> </tr> <tr> <td>Skin irritation</td> <td>2</td> <td>H315</td> </tr> <tr> <td>Skin sensitization</td> <td>1</td> <td>H317</td> </tr> </tbody> </table>	Hazard Class	Hazard Category	Hazard Statement	Acute toxicity	4	H302	Eye irritation	2	H319	STOT SE	3	H335	Skin irritation	2	H315	Skin sensitization	1	H317	
Hazard Class	Hazard Category	Hazard Statement																			
Acute toxicity	4	H302																			
Eye irritation	2	H319																			
STOT SE	3	H335																			
Skin irritation	2	H315																			
Skin sensitization	1	H317																			
2.1.2	Classification according to Directive 67/548/EEC	Harmful (Xn) R22, irritant; Xi; R 36/37/38-43 (See SECTION 16 for full text of risk phrases)																			
2.2	GHS Label Elements																				
	Hazard Pictograms																				
																					
	Signal Word: WARNING																				
	Restricted to use by dental professional only.																				
	Hazard Statements																				
	H302 Harmful if swallowed.																				
	H319: Eye irritation. 2. May cause eye irritation.																				
	H335: STOT SE. 3. May cause respiratory irritation.																				

Trade Name: **EMBRACE™ Product Line**

H315: Skin irritation. 2. May cause skin irritation.
H317: Sensitization. 1. May cause an allergic skin reaction.

Precautionary Statements

P261: Avoid breathing vapor.
P280: Wear protective gloves and eye protection
P305+P351: If in eyes, rinse cautiously with water for several minutes.
P337+P313: If eye irritation persists, get medical advice/attention.
P302+P352: If on skin, wash with plenty of soap and water.
P333+P313: If irritation or rash occurs, get medical advice/attention.
P410+P411: Protect from sunlight. Store at temperature not exceeding 27°C / 80°F.

3.0 Composition

3.1 Chemical characterization of the preparation: Acrylate ester monomers in two-part, glass-filled, dual-cure paste.

3.2 Hazardous ingredients

CAS Number	Name of the Ingredient	Concentration	Classification per 67/548/EEC	Classification per Regulation (EC) No.1272/2008 (CLP).
Proprietary	Uncured acrylate ester monomers	55-60%	Irritant; Xi R 3637//38 - 43	Eye irritation, 2 H319 STOT SE 3 H335 Skin irritation, 2 H315 Skin sensitization,1H317
112945-52-5	Silica, amorphous	5 %	Irritant; Xi, R 36/37/38	Eye irritation, 2 H319 STOT SE 3 H335 Skin irritation, 2 H315
7681-49-4	Sodium fluoride	<2%	Harmful (Xn); R22-36/38	Acute toxicity, 4 H302 Skin irritation, 2 H315 Eye irritation, 2 H319

4.0 First Aid Measures

4.1	General Information	May be irritating to eyes, respiratory system and skin. Do not inhale vapors. May cause sensitization by skin contact. Show this safety data sheet to medical personnel. Get medical attention in case of uncertainty.
4.2	Inhalation	Move to fresh air. If necessary, administer oxygen and/or artificial respiration. Seek medical attention.
4.3	Skin Contact	Take off contaminated clothing. Wash thoroughly with soap and water.
4.4	Eye Contact	Keep eyelids apart, flush with running water for 15+ minutes. Get medical attention.
4.5	Ingestion	Rinse mouth with water. Do not induce vomiting. Get immediate medical attention. May be irritating to mucous membranes. Never give anything by mouth to an unconscious person.
4.6	Precautions for first responders	Ventilate the area. Wear eye and skin protection.
4.7	Information for physicians	
	Symptoms	Irritation or redness in eyes, throat or on skin.
	Hazards	May be irritating to eyes, respiratory system, skin or sensitizing by skin contact.
	Treatment	As above under First Aid.

5.0 Fire Fighting Measures

Trade Name: **EMBRACE™ Product Line**

5.1	Suitable extinguishing media	Carbon dioxide, dry chemical, alcohol foam, or water fog. Water spray may be used to keep fire exposed containers cool.	
5.2	Extinguishing media to avoid	Do not use direct water stream	
5.3	Special exposure hazards in a fire	Heat may cause polymerization with rapid release of energy.	
5.4	Special protective equipment for fire-fighters	Self-contained breathing apparatus. Cool exposed containers with water spray to prevent polymerization under fire conditions.	
6.0	Accidental Release Measures		
6.1	Personal precautions.	Wear safety glasses, gloves and lab coat.	
6.2	Environmental precautions	Avoid releasing large amounts of uncured material into the environment. Cured / set-up material is, to our knowledge, inert.	
6.3	Method for clean up	Contain spilled material. Absorb or wipe up spill with paper towels or cloths. Collect for disposal in a covered container. Wash spill area with alcohol or soap and water.	
7.0	Handling and Storage		
7.1	Handling	For use only by dental professionals. Follow good hygiene practices. Avoid direct/strong light sources, temperature extremes (>27°C/80°F, <5°C/40°F), contamination and cross contamination. Recap immediately after use.	
7.2	Storage	Store product tightly capped in original container at cool room temperature (<25°C). Avoid direct, strong light, sources of ignition and extremes of temperature. Shelf life for unopened product is two years from date of manufacture, provided that the material has been stored properly.	
7.3	Specific uses	Dental restorative materials	
8.0	Exposure Controls / Personal Protection		
8.1	Exposure limit values	PEL: Not established. TLV: Not established.	
8.2	Exposure controls		
8.2.1	Occupational exposure controls	No special equipment required under normal conditions of use.	
8.2.1.1	Respiratory protection	Good general ventilation will control airborne vapors from uncured material.	
8.2.1.2	Hand protection	No special requirements other than the usual surgical gloves.	
8.2.1.3	Eye protection	No special requirements other than the usual safety glasses.	
8.2.1.4	Skin protection	Good personal hygiene and safety practices and wearing a lab coat should protect from exposure to uncured material.	
8.2.1.5	Other controls	Emergency eye wash fountain should be available. Wash hands after use.	
8.2.2	Environmental exposure controls	Cure material before disposing.	
9.0	Physical and Chemical Properties		
9.1	Characteristics		
9.1.1	Appearance /Color / Physical state	<u>Embrace Product</u>	<u>Description</u>
		<i>First Coat, Seal-n-Shine</i>	Thin, clear liquid
		<i>Esthetic Opaquer</i>	Opaque, thick paste: Bleach White, Off-White, Light Yellow, Pink, Dark Yellow
		<i>Pit and Fissure Sealant</i>	Natural tooth shade or

Trade Name: **EMBRACE™ Product Line**

		<i>Pit and Fissure Sealant, Low Fill</i>	off-white thin paste.
		<i>Class V</i>	Off-white thin paste
		<i>Resin Cement:</i>	Tooth-colored paste.
			Two thin pastes: one white, one yellow.
9.1.2	Odor	Faint, characteristic	
9.2	Important health, safety and environmental information		
9.2.1	pH	Not determined	
9.2.2	Boiling point	Not determined	
9.2.3	Flash point	Not determined	
9.2.4	Flammability (solid, gas)	Not applicable	
9.2.5	Explosive properties	Not applicable	
9.2.6	Oxidizing properties	Not determined	
9.2.7	Vapor pressure	< 1 mm Hg	
9.2.8	Specific gravity	Embrace First Coat: 1.420 Embrace Seal-n-Shine: 1.240 Embrace Opaquer: 1.780 Embrace Pit & Fissure Sealant: 1.575 Embrace Pit & Fissure Sealant, Low Fill: 1.160 Embrace Class V: 2.030 Embrace Resin Cement: Low Viscosity: 1.660 Embrace Resin Cement: Medium Viscosity: 1.400	
9.2.9	Solubility in water	Nil	
9.2.10	Partition coefficient	Not determined	
9.2.11	Viscosity	Not determined	
9.2.12	Vapor density	Not determined	
9.2.13	Evaporation rate	Not determined	

10.0 Stability and reactivity

10.1	Conditions to avoid	Temperature > 38°C, intense light, cross-contamination.
10.2	Materials to avoid	Reducing and oxidizing agents, peroxides, amines.
10.3	Hazardous decomposition products	Under fire conditions and with amounts greater than that supplied in this product, hazardous polymerization may occur with heat build-up release of carbon monoxide, carbon dioxide, and oxides of nitrogen.
10.4	Further information	Stable material if stored and used as directed. Polymerization will occur when light-cured material is exposed to direct light.

11.0 Toxicological information

11.1	Acute toxicity	Not toxic. Minimal health hazard under normal conditions of use.
11.2	Irritation and corrosiveness	May be irritating to eyes, respiratory tract, mucous membranes or skin on contact or with prolonged exposure.


Trade Name: **EMBRACE™ Product Line**

11.3	Sensitization	May be sensitizing. Prolonged or frequent skin contact may cause allergic skin reactions in some susceptible individuals.
11.4	Sub-acute, sub-chronic and prolonged toxicity	Prolonged and/or frequent skin contact may cause allergic skin reactions in susceptible individuals.
11.5	Carcinogenicity, Mutagenicity, Reproductive Toxicity	None known
11.6	Empirical data	Not available
11.7	Clinical experience	Embrace products have been used safely and effectively by dentists in the US and internationally for more than 10 years with no reports of adverse events.
12.0 Ecological Information		
12.1	Ecotoxicity	Avoid release of uncured material into the environment. To the best of our knowledge, polymerized material is inert. No other information is available. Follow all government regulations.
13.0 Disposal Considerations		
13.1	Regulations	Follow all local and national government regulations in disposing material or contaminated packaging.
14.0 Transport Information		
14.1	Restrictions	None. Not regulated.
15.0 Regulatory Information		
15.1	EU	Class IIa medical devices under MDD 93/42/EEC.
15.2	US FDA	Class II medical devices.
15.3	Health Canada	Class III medical devices
16.0 Other information		
16.1	List of relevant R phrases	R22: Harmful if swallowed. R 36 / 3 7/ 38: Irritating to eyes, respiratory system and skin. R 43: Sensitizing by skin contact.
16.2	Hazard Statements	H302: Harmful if swallowed, Category 4. H319: Eye irritation. Hazard category 2. H335: Specific Target Organ Toxicity - Single exposure; hazard category. 3. Respiratory tract irritation. H315: Skin irritation. Hazard category 2. H317: Skin Sensitization. Hazard category 1.
16.3	Precautionary Statements	P261: Avoid breathing vapor. P280: Wear protective gloves and eye protection P305 + P351: If in eyes, rinse cautiously with water for several minutes. P337 + P313: If eye irritation persists, get medical advice/attention. P302 + P352: If on skin, wash with plenty of soap and water. P333 + P313: If irritation or rash occurs, get medical advice /

Trade Name: **EMBRACE™ Product Line**

		attention. P410 + P411: Protect from sunlight. Store at temperature not exceeding 27°C / 80°F.
16.4	Restrictions on use	Embrace Product Line is to be sold to and used by dental professionals only.
16.5	Further information	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.
16.6	Sources of key data	National Institute for Occupational Safety (NIOSH) US Occupational Safety and Health Administration (OSHA) Eur-Lex European Union Law: Regulation (EC) No. 1272/2008 (CLP) and Regulation (EC) No. 1907/2006 (REACH). Guidance on the compilation of safety data sheets. Version 1.1; December 2011. European Chemicals Agency
16.7	Information which has been added, deleted or revised.	This Safety Data Sheet has been revised to meet the GHS SDS format and the requirements of Regulation (EC) No. 1272/2008 (CLP) and Regulation (EC) No. 1907/2006 (REACH). Specifically Sections 2.1, 2.2, 3.2, 16.2, 16.3 have been modified.

Safety Data SheetTrade Name: **PULPDENT KOOL-DAM**

1.0 Commercial Product Name and Supplier																		
1.1	Commercial product name / designation	Kool-Dam Heatless Liquid Dam & Block Out Resin																
1.2	Application / Use	Dental material for use by dental professional only.																
1.2.2	SIC	851 Human health activity																
1.2.3	Use Category	55																
1.3	Manufacturer	Pulpdent Corporation 80 Oakland Street, P.O. Box 780 Watertown, MA 02472 USA Telephone: 1 617 926-6666 Fax: 1 617 926-6262 Email: Pulpdent@pulpdent.com																
1.4	Emergency Telephone Number	1-800-535-5053 (24 Hour / USA)																
1.5	Authorized European Representative	Advena Limited Tower Business Centre, 2nd Floor, Tower Street, Swatar, BKR 4013 Malta																
	UK Responsible Person	Advena Limited Pure Offices, Plato Close Warwick, CV34 6WE United Kingdom																
2.0 Hazards Identification																		
2.1	Classification	Irritant.																
2.1.1	Classification according to Regulation (EC) No 1272/2008 [CLP]	<table border="1"> <thead> <tr> <th><u>Hazard Class</u></th> <th><u>Hazard Category</u></th> <th><u>Hazard Statement</u></th> </tr> </thead> <tbody> <tr> <td>Eye irritation</td> <td>2</td> <td>H319</td> </tr> <tr> <td>STOT SE</td> <td>3</td> <td>H335</td> </tr> <tr> <td>Skin irritation</td> <td>2</td> <td>H315</td> </tr> <tr> <td>Skin sensitization</td> <td>1</td> <td>H317</td> </tr> </tbody> </table>	<u>Hazard Class</u>	<u>Hazard Category</u>	<u>Hazard Statement</u>	Eye irritation	2	H319	STOT SE	3	H335	Skin irritation	2	H315	Skin sensitization	1	H317	
<u>Hazard Class</u>	<u>Hazard Category</u>	<u>Hazard Statement</u>																
Eye irritation	2	H319																
STOT SE	3	H335																
Skin irritation	2	H315																
Skin sensitization	1	H317																
2.1.2	Classification according to Directive 67/548/EEC (See SECTION 16 for full text of risk phrases)	Irritant; Xi; R 36/37/38 - 43																
2.2	GHS Label Elements																	
	Hazard Pictograms																	
	Signal Word: WARNING																	
	Restricted to use by dental professional only.																	
	Hazard Statements																	
	H319: Eye irritation. 2. May cause eye irritation.																	
	H335: STOT SE. 3. May cause respiratory irritation.																	
	H315: Skin irritation. 2. May cause skin irritation.																	
	H317: Sensitization. 1. May cause an allergic skin reaction.																	
	Precautionary Statements																	
	P261: Avoid breathing vapor.																	
	P280: Wear protective gloves and eye protection																	
	P305+P351: If in eyes, rinse cautiously with water for several minutes.																	
	P337+P313: If eye irritation persists, get medical advice/attention.																	
	P302+P352: If on skin, wash with plenty of soap and water.																	
	P333+P313: If irritation or rash occurs, get medical advice/attention.																	
	P410+P411: Protect from sunlight. Store at temperature not exceeding 27°C / 80°F.																	

Safety Data SheetTrade Name: **PULPDENT KOOL-DAM**

3.0 Composition																
3.1	Chemical characterization of the preparation Methacrylate ester monomers in a light-cured, glass-filled paste.															
3.2	Hazardous ingredients															
	<table border="1"> <thead> <tr> <th>CAS Number</th> <th>Name of the Ingredient</th> <th>Concentration</th> <th>Classification per 67/548/EEC</th> <th>Classification per Regulation (EC) No.1272/2008 (CLP)</th> </tr> </thead> <tbody> <tr> <td>Proprietary</td> <td>Uncured methacrylate ester monomers</td> <td>55-65%</td> <td>Xi (Irritant) R36/37/38, R43</td> <td>Eye irritation, 2, H319 STOT SE 3, H335 Skin irritation, 2, H315 Skin sensitization, 1, H317</td> </tr> <tr> <td>112945-52-5</td> <td>Amorphous silica</td> <td>5 %</td> <td>Xi (Irritant), R36/37/38</td> <td>Eye irritation, 2, H319 STOT SE 3, H335 Skin irritation, 2, H315</td> </tr> </tbody> </table>	CAS Number	Name of the Ingredient	Concentration	Classification per 67/548/EEC	Classification per Regulation (EC) No.1272/2008 (CLP)	Proprietary	Uncured methacrylate ester monomers	55-65%	Xi (Irritant) R36/37/38, R43	Eye irritation, 2, H319 STOT SE 3, H335 Skin irritation, 2, H315 Skin sensitization, 1, H317	112945-52-5	Amorphous silica	5 %	Xi (Irritant), R36/37/38	Eye irritation, 2, H319 STOT SE 3, H335 Skin irritation, 2, H315
CAS Number	Name of the Ingredient	Concentration	Classification per 67/548/EEC	Classification per Regulation (EC) No.1272/2008 (CLP)												
Proprietary	Uncured methacrylate ester monomers	55-65%	Xi (Irritant) R36/37/38, R43	Eye irritation, 2, H319 STOT SE 3, H335 Skin irritation, 2, H315 Skin sensitization, 1, H317												
112945-52-5	Amorphous silica	5 %	Xi (Irritant), R36/37/38	Eye irritation, 2, H319 STOT SE 3, H335 Skin irritation, 2, H315												
4.0 First Aid Measures																
4.1	General Information Minimal health hazard under normal conditions of use. May be irritating to eyes, respiratory system and skin on contact. Prolonged or repeated contact with methacrylate may cause sensitization. Show this safety data sheet to medical personnel. Get medical attention in case of uncertainty.															
4.2	Inhalation Move to fresh air. If necessary, administer oxygen / artificial respiration; seek medical attention.															
4.3	Skin Contact Take off contaminated clothing. Wash skin thoroughly with soap and water for 15 minutes.															
4.4	Eye Contact Keep eyelids apart and flush with running water for 15+ minutes. Get medical attention.															
4.5	Ingestion Rinse mouth with water. Do not induce vomiting. Get immediate medical attention. May be irritating to mucous membranes. Never give anything by mouth to an unconscious person.															
4.6	Precautions for first responders Ventilate the area. Wear eye and skin protection.															
4.7	Information for physicians															
	Symptoms Irritation or redness in eyes, throat or on skin.															
	Hazards May be irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.															
	Treatment As above under First Aid.															
5.0 Fire Fighting Measures																
5.1	Suitable extinguishing media Carbon dioxide, dry chemical, alcohol foam or water fog. Water spray may be used to keep fire exposed containers cool.															
5.2	Extinguishing media to avoid Do not use direct water stream															
5.3	Special exposure hazards in a fire Heat may cause polymerization with rapid release of energy.															
5.4	Special protective equipment for fire-fighters A self-contained breathing apparatus should be worn by fire fighting personnel.															
6.0 Accidental Release Measures																
6.1	Personal precautions Ventilate area. Wear safety glasses, gloves, and lab coat.															
6.2	Environmental precautions Contain spilled material. Follow all government regulations.															
6.3	Method for clean up Absorb or wipe up spill with suitable material (paper towels or cloths). Collect for disposal in a covered container. Wash area of spill with alcohol or soap and															

Safety Data SheetTrade Name: **PULPDENT KOOL-DAM**

water.

7.0 Handling and Storage		
7.1	Handling	For use only by dental professionals. Follow good hygiene practices. Remove applicator tip from syringe and recap immediately after use. Keep light-cured materials shaded from intense light sources.
7.2	Storage	Store tightly capped in original container at cool room temperature (<25°C). Avoid direct light, sources of ignition, extremes of temperature (>27°C/80°F, <5°C/40°F). Shelf life for unopened product is two years from date of manufacture, provided that the material has been stored properly.
7.3	Specific uses	Dental material
8.0 Exposure Controls / Personal Protection		
8.1	Exposure limit values	PEL: Not established. TLV: Not established.
8.2	Exposure controls	
8.2.1	Occupational exposure controls	No special equipment required under normal conditions of use.
8.2.1.1	Respiratory protection	Good general ventilation is sufficient to control any airborne vapors..
8.2.1.2	Hand protection	No special requirements other than the usual surgical gloves.
8.2.1.3	Eye protection	No special requirements other than the usual safety glasses.
8.2.1.4	Skin protection	Good personal hygiene and safety practices; lab coat.
8.2.1.5	Other controls	Emergency eye wash fountain should be available. Wash hands after use.
8.2.2	Environmental exposure controls	Follow all government regulations. Cure material before disposing.
9.0 Physical and Chemical Properties		
9.1	Characteristics	
9.1.1	Appearance /Color / Physical state	Light blue gel
9.1.2	Odor	Faint, characteristic
9.2	Important health, safety and environmental information	
9.2.1	pH	Not determined
9.2.2	Boiling point	Not determined
9.2.3	Flash point	Not determined
9.2.4	Flammability (solid, gas)	Not applicable
9.2.5	Explosive properties	Not applicable
9.2.6	Oxidizing properties	Not determined
9.2.7	Vapor pressure	< 1 mm Hg / 133 Pa / Id: B
9.2.8	Specific gravity	1.290
9.2.9	Solubility in water	Nil
9.2.10	Partition coefficient	Not determined
9.2.11	Viscosity	Not determined
9.2.12	Vapor density	Not determined
9.2.13	Evaporation rate	Not determined
10.0 Stability and reactivity		


Safety Data SheetTrade Name: **PULPDENT KOOL-DAM**

10.1	Conditions to avoid	Temperature extremes (>80°F / 27°C, <40°F/ 5°C), intense light, contamination.
10.2	Materials to avoid	Reducing and oxidizing agents, peroxides, amines.
10.3	Hazardous decomposition products	Under fire conditions and with amounts far greater than that supplied in this product, hazardous polymerization may occur with heat build-up, release of carbon monoxide, carbon dioxide, oxides of nitrogen.
10.4	Further information	Polymerization will occur when exposed to direct light.
11.0	Toxicological information	
11.1	Acute toxicity	Not toxic. Minimal health hazard in the quantities present in this product and under normal conditions of use.
11.2	Irritation and corrosiveness	May be irritating to eyes, mucous membranes or skin on contact or with prolonged exposure.
11.3	Sensitization	May be sensitizing. Prolonged or frequent skin contact may cause allergic skin reactions in some susceptible individuals.
11.4	Sub-acute, sub-chronic and prolonged toxicity	Prolonged and/or frequent skin contact may cause allergic skin reactions in susceptible individuals. Prolonged exposure to large amounts (more than in this product) of this material may cause eye and respiratory irritation.
11.5	Carcinogenicity, Mutagenicity, Reproductive Toxicity	None known
11.6	Empirical data	Not available
11.7	Clinical experience	Kool-Dam has been used safely and effectively in the US and internationally for about 10 years with no reports of adverse events.
12.0	Ecological Information	
12.1	Ecotoxicity	To the best of our knowledge, polymerized material is inert. No other information is available. Follow all government regulations.
13.0	Disposal Considerations	
13.1	Regulations	Follow all local and national government regulations in disposing material or contaminated packaging.
14.0	Transport Information	
14.1	Restrictions	None. Not regulated by IATA.
15.0	Regulatory Information	
15.1	EU	Class I medical devices under MDR 93/42/EEC.
15.2	US FDA	Class I medical device
15.3	Health Canada	Class III medical device
16.0	Other information	
16.1	List of relevant R phrases	R36/37/38: Irritating to eyes, respiratory system and skin. R43: Sensitizing by skin contact

Safety Data SheetTrade Name: **PULPDENT KOOL-DAM**

16.2	Hazard Statements	H319: Eye irritation. Hazard category 2. H335: Specific Target Organ Toxicity - Single exposure; hazard category. 3. Respiratory tract irritation. H315: Skin irritation. Hazard category 2. H317: Skin Sensitization. Hazard category 1.
16.3	Precautionary Statements	P261: Avoid breathing vapor. P280: Wear protective gloves and eye protection P305 + P351: If in eyes, rinse cautiously with water for several minutes. P337 + P313: If eye irritation persists, get medical advice/attention. P302 + P352: If on skin, wash with plenty of soap and water. P333 + P313: If irritation or rash occurs, get medical advice / attention. P410 + P411: Protect from sunlight. Store at temperature not exceeding 27°C / 80°F.
16.4	Restrictions on use	Pulpdent products are to be sold to and used by dental professionals only.
16.5	Further information	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.
16.6	Sources of key data	National Institute for Occupational Safety (NIOSH) US Occupational Safety and Health Administration (OSHA) Eur-Lex European Union Law: Regulation (EC) No. 1272/2008 (CLP) and Regulation (EC) No. 1907/2006 (REACH). Guidance on the compilation of safety data sheets. Version 1.1; December 2011. European Chemicals Agency
16.7	Information which has been added, deleted or revised.	This Safety Data Sheet has been revised to meet the requirements of the GHS SDS format, Regulations (EC) No. 1272/2008 (CLP) and (EC) No. 1907/2006 (REACH). Specifically, Sections 2.1, 2.2, 3.2, 16.2, 16.3 have been modified.

Safety Data SheetTrade Name: **Porcelain Etch Gel**

1.0 Commercial Product Name and Supplier				
1.1	Commercial product name / designation	Porcelain Etch Gel, 9.6% Hydrofluoric Acid Gel		
1.2	Application / Use	Dental material used to etch porcelain.		
1.2.2	SIC	851 Human health activity		
1.3	Manufacturer Pulpdent Corporation 80 Oakland Street, PO Box 780 Watertown, MA 02472 USA	Telephone: 1 617 926-6666 / Fax: 1 617 926-6262 Email: Pulpdent@pulpdent.com		
1.4	Emergency Telephone Number	1-800-535-5053 (24 Hour / USA)		
1.5	Authorized European Representative	Advena Limited Tower Business Centre, 2nd Floor, Tower Street, Swatar, BKR 4013 Malta		
	UK Responsible Person	Advena Limited Pure Offices, Plato Close Warwick, CV34 6WE United Kingdom		
2.0 Hazards Identification				
2.1	Classification			
2.1.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	<u>Hazard Class</u> Acute Toxicity Skin Corrosion / Serious eye damage	<u>Hazard Category</u> 2 1A	<u>Hazard Statement</u> H300, H330, H310 H314
2.1.2	Classification according to Directive 67/548/EEC (See SECTION 16 for full text of risk phrases)	T; R26/27/28 C; R35		
2.2	GHS Label Elements			
	Hazard Pictograms			
				
	Signal Word: DANGER			
	Restricted to use by dental professional only.			
	Hazard Statements			
	H300: Fatal if swallowed			
	H330: Fatal if inhaled.			
	H310: Fatal in contact with skin.			
	H314: Causes severe skin burns and eye damage.			
	Precautionary Statements			
	P260: Do not breathe dust/fume/gas/mist/vapors/spray			
	P262: Do not get in eyes, on skin or on clothing.			
	P264: Wash hands thoroughly after handling.			
	P280: Wear protective gloves, lab coat and eye/face protection.			
	P301+P310: If swallowed, IMMEDIATELY call a Poison Center or doctor/physician.			

Safety Data SheetTrade Name: **Porcelain Etch Gel**

P302+P350: If on skin, gently wash with soap and water.

P304+340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing until pH of tears is 7.

3.0 Composition

3.1 Chemical Characterization 9.6% Hydrofluoric Acid in a proprietary gel base

3.2 Hazardous Ingredients

CAS Number	Name of the ingredient	Concentration	Classification per 67/548/EEC	Classification per Regulation (EC) No.1272/2008 (CLP).
7664-39-3	Hydrofluoric acid	9.6%	T; R 26/27/28 C; R 35	Acute Toxicity; 2 Skin Corrosion / Serious eye damage, 1A
64-17-5	Ethyl alcohol	5.3 %	Xi: R 10-36/37/38	Flammable liquid,2 Eye irritation, 2 STOT SE, 3 Skin irritation, 2

4.0 First Aid Measures

4.1	General Information	VERY CORROSIVE! Toxic! Although Porcelain Etch Gel is buffered, diluted (9.6%) hydrofluoric acid that has been incorporated into a gel, this product is still very corrosive. AVOID ALL CONTACT WITH PRODUCT. May be fatal if inhaled, swallowed or absorbed through skin. Causes severe burns. Acute effects may be delayed.
4.2	Eye Contact	Call for emergency medical care. Immediately (within 1 minute) flush eyes and surrounding skin with running water for 30-60 minutes, holding lids apart to ensure flushing of the entire surface. Get emergency medical attention only after the flushing is complete unless it can be continued during transport.
4.3	Skin Contact	Call for emergency medical care. Immediately flush skin with running water for 30-60 minutes while removing contaminated clothing and shoes. Get emergency medical attention only after the flushing is complete unless it can be continued during transport. Apply 2.5% calcium gluconate gel to the exposed area (rubbing it in well) every 15 minutes; if calcium gluconate is not available, apply benzethonium chloride or benzalkonium chloride to the exposed area.
4.4	Ingestion	Call for emergency medical care. Do not induce vomiting. If conscious, have patient rinse mouth and drink a large amount of water to dilute. Never give anything by mouth to an unconscious person
4.5	Inhalation	Remove patient to fresh air. Administer oxygen, artificial respiration and/or CPR as necessary. Seek immediate medical care. Have patient lie down; keep quiet, warm.
4.6	Precautions for first responders	Avoid all contact with material. Wear face shield, gloves, lab coat. Awareness of burns may be delayed. Begin first aid as soon as possible. Have someone else call for emergency medical care and ventilate area.
4.7	Information for physicians	
	Symptoms	Pain and redness at site of contact. Victim may not initially be aware of burn.
	Hazards	May be fatal if inhaled, swallowed, absorbed through skin. Causes severe burns.
	Treatment	Same as above (4.1 to 4.4). Also, skin burns may be treated by immersing the area in iced magnesium sulfate solution (25 to 50%) or iced water, taking care to prevent

Safety Data SheetTrade Name: **Porcelain Etch Gel**

frostbite by moving from iced solution every 10 to 15 minutes.

5.0 Fire Fighting Measures		
5.1	Suitable extinguishing media	Carbon dioxide. Dry chemical.
5.2	Extinguishing media to avoid	Water.
5.3	Special exposure hazards in a fire	Porcelain Etch Gel: None likely in this product. Bulk Hydrofluoric acid in closed containers: Pressure will build to dangerous levels when exposed to high temperatures. Flammable when heated.
5.4	Special protective equipment for firefighters	Firefighters should wear self-contained breathing apparatus with full face-piece operated in pressure demand or other positive pressure mode.
6.0 Accidental Release Measures		
6.1	Personal precautions	Wear face shield or goggles, chemically resistant gloves, and buttoned up lab coat. Avoid all contact with material. Ventilate the area.
6.2	Environmental precautions	Not indicated for the quantity of HF in this product and under normal conditions of use in a dental practice. Large amounts should not be flushed into sewer.
6.3	Method for clean up	For a small spill (this product): Absorb or wipe up spill with inert material, such as paper towels, and transfer to container for disposal. Wash spill site.
7.0 Handling and Storage		
7.1	Handling	<i>For use by dental professionals only.</i> Keep tightly capped in original container. Do not add any other material to container. Empty container may contain explosive or flammable residue.
7.2	Industrial Hygiene	Do not allow food or drink consumption or smoking while handling. Wear protective gloves and goggles. Do not get in eyes, on skin, or on clothing. Wash hands well after use.
7.3	Storage	Recap immediately after use. Store tightly capped in original container at cool room temperature (<25°C) and in a dry, well-ventilated area. Avoid water, heat, sparks, flame, organic substances, and direct sunlight.
8.0 Exposure Controls / Personal Protection		
8.1	Exposure limit values	PEL/TLV (HF): 3 ppm; TWA (Alcohol): 1000 ppm
8.2	Exposure controls	
8.2.1	Occupational exposure controls	Eye protection and chemically impervious gloves are recommended for dental personnel under anticipated conditions of normal use.
8.2.1.1	Respiratory protection	For the small quantity provided in this product, no special respiratory protection is required. Local mechanical exhaust ventilation should be used to maintain exposure below 3 ppm. For large amounts of hydrofluoric acid, when threshold limits are exceeded (greater than 3 ppm), use self-contained breathing apparatus. Guard against aspiration into lungs.
8.2.1.2	Hand protection	Neoprene or polyethylene gloves are recommended.
8.2.1.3	Eye protection	Safety glasses or face shield worn by dental staff is adequate under normal conditions of use. For large quantities, safety goggles are required.
8.2.1.4	Skin Protection	Wear buttoned lab coat, long sleeves and/or apron over clothing to protect skin.

Safety Data SheetTrade Name: **Porcelain Etch Gel**

- 8.2.1.5 Other Controls 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. Patient should wear safety glasses. Emergency eye wash fountain should be close by. Wash hands thoroughly after handling. Clean protective equipment before reuse
- 8.2.2 Environmental exposure controls Do not wash large amounts of any acid into sewer system.

9.0 Physical and Chemical Properties

- 9.1 Characteristics
- 9.1.1 Appearance /Color / Physical state Transparent yellow gel
- 9.1.2 Odor Characteristic
- 9.2 Important health, safety and environmental information
- 9.2.1 pH value pH <1.5
- 9.2.2 Boiling Point (Hydrofluoric acid) 108.33°C
- 9.2.3 Flash point Not determined
- 9.2.4 Flammability Not applicable for Porcelain Etch Gel.
- 9.2.5 Explosive properties Not applicable for Porcelain Etch Gel. For bulk hydrofluoric acid in closed containers: Pressure will build to dangerous levels when exposed to high temperatures. Flammable when heated.
- 9.2.6 Oxidizing properties Not determined
- 9.2.7 Vapor Pressure 10.00 mm Hg / 13.33 mbar / Id: E
- 9.2.8 Specific Gravity 1.18
- 9.2.9 Solubility in water 100%
- 9.2.10 Partition coefficient Not determined
- 9.2.11 Viscosity Not determined
- 9.2.12 Vapor density 0.7
- 9.2.13 Evaporation rate Not determined
- 9.2.14 Ignition temperature Not applicable
- 9.2.15 Further information Odor Threshold: 0.04 ppm

10.0 Stability and reactivity

- 10.1 Conditions to avoid Extremes of temperature (>27°C/80°F, <5°C/40°F), sparks, open flame, all other sources of ignition, contamination
- 10.2 Materials to avoid Water, glass, concrete, materials containing silicon, carbonates, sulfides, cyanides, alkalis, bases, reducing agents, nitric acid, organic materials, metals.
- 10.3 Hazardous decomposition products Not available
- 10.4 Hazardous reactions Strong exothermic reaction when exposed to incompatible substances. Pressure will build to dangerous levels when closed containers of hydrofluoric acid are exposed to high temperatures. Flammable when heated.

11.0 Toxicological information

- 11.1 Acute toxicity of Hydrofluoric acid PEL/TLV: 3 ppm. Dermal LD₅₀ mouse: 500 mg/kg. Vapor LC₅₀ human: 50 ppm,

Safety Data SheetTrade Name: **Porcelain Etch Gel**

	(as F)	30 min. Causes severe burns. Destructive to tissue. Sensation may be delayed.
11.2	Irritation and corrosiveness	Causes severe burns. Destructive to tissue. Sensation of burn may be delayed.
11.3	Sensitization	Not a sensitizer
11.4	Sub-acute, sub-chronic and prolonged toxicity	Not likely in the quantity and concentration available in this product.
11.5	Carcinogenicity, Mutagenicity, Reproductive Toxicity	None known.
11.6	Empirical data	None available.
11.7	Clinical experience	Pulpdent Porcelain Etch Gel has been used safely and effectively for almost twenty years to successfully prepare porcelain surfaces for bonding. There have been no reports of serious injury during that time. Many of these preparations have taken place in a dental lab where there is less danger. Sometimes, however, it is necessary to use Porcelain Etch Gel intraorally. For these cases, it is most important to have a well-trained, experienced dentist perform the procedure and to use adequate shielding of soft tissue.
12.0 Ecological Information		
12.1	Ecotoxicity	Strong acid. Large amounts of HF may damage wildlife or aquatic ecosystems. Do not flush large amounts to sewer; do not allow large amounts to flow into bodies of water.
13.0 Disposal Considerations		
13.1	Regulations	Follow all local and national government regulations in disposing material or contaminated packaging.
14.0 Transport Information		
14.1	UN Number	UN 1790
14.2	Technical name	Hydrofluoric Acid Preparation
14.3	IATA Class / Packing group	Class 8, 6.1, Packing Group II
14.4	Transport over land	US DOT/ IATA: Excepted Small Quantities. Maximum unit quantity: 0.5L
14.4.1	Transport Class	Class 8, 6.1, Packing Group II
14.4.2	Label	Hydrofluoric Acid Preparation. Corrosive! Toxic!
14.5	Transport at sea	US DOT/IATA: Excepted Small Quantities. On deck, under deck, passenger and cargo vessels Maximum unit quantity: 0.5L
14.5.1	Transport Class	Class 8, 6.1, Packing Group II
14.5.2	Label	Hydrofluoric Acid Preparation; Corrosive! Toxic!
14.6	Air transport	US DOT/ IATA: Excepted Small Quantities. Maximum unit quantity: 30 ml
14.6.1	Transport Class	Class 8, 6.1, Packing Group II
14.6.2	Label	Hydrofluoric Acid Preparation. Corrosive! Toxic!
14.7	Further information	No aluminum or glass containers. Packaging must be very secure to prevent leaks and breakage.
15.0 Regulatory Information		
15.1	EU	Class I medical device under the MDR 93/42/EEC.

Safety Data SheetTrade Name: **Porcelain Etch Gel**

15.2	US FDA	Class II medical device
15.3	Health Canada	Class III medical device

16.0 Other information		
16.1	List of the relevant R phrases	R 35: Causes severe burns R 26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.
16.2	Hazard Statements	H300: Fatal if swallowed H330: Fatal if inhaled. H310: Fatal in contact with skin. H314: Causes severe skin burns and eye damage.
16.3	Precautionary Statements	P260: Do not breathe dust/fume/gas/mist/vapours/spray. P262: Do not get in eyes, on skin or on clothing. P264: Wash hands thoroughly after handling. P280: Wear protective gloves, lab coat and eye/face protection. P301 + P310: If swallowed, immediately call Poison Center or doctor/physician. P302 + P350: If on skin, gently wash with soap and water. P304 + 340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing until pH of tears is 7.
16.4	Restrictions on use	Porcelain Etch Gel is to be sold to and used by dental professionals only.
16.5	Further information	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 Puldent Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.
16.6	Sources of key data	National Institute for Occupational Safety (NIOSH) Occupational Safety and Health Administration (OSHA) Eur-Lex European Union Law: Regulation (EC) No. 1272/2008 (CLP) and Regulation (EC) No. 1907/2006 (REACH). Guidance on the compilation of safety data sheets. Version 1.1; December 2011. European Chemicals Agency
16.7	Information which has been added, deleted or revised.	This Safety Data Sheet has been revised to meet the requirements of the GHS SDS format, Regulation (EC) No. 1272/2008 (CLP) and Regulation (EC) No. 1907/2006 (REACH). Specifically, Sections 2.1, 2.2, 3.2, 16.2, 16.3 have been modified.