

SAFETY DATA SHEETS

This SDS packet was issued with item:

072343325

N/A

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure mm HG: NA
Evaporation Rate (Ether = 1): NA
Solubility in Water: Soluble
Appearance: Blue Gel

Vapor Density (Air = 1): NA
% Volatile by Volume: NA
Boiling Point: NA
Odor: None

SECTION X - STABILITY AND REACTIVITY

Stability: Stable
Conditions to Avoid: Prolonged extreme heat
Incompatibility: (Materials to avoid) Contact with metals
Hazardous Decomposition Products: None
Hazardous Polymerization: None

SECTION XI - TOXICOLOGICAL INFORMATION

None

SECTION XII - ECOLOGICAL INFORMATION

Waste may be considered as inert material.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of safely in accordance with local, state, and federal regulations

SECTION XIV - TRANSPORT INFORMATION

Stable under normal conditions of use, transportation, and storage.

SECTION XV - REGULATORY INFORMATION

510K #: K092912

SECTION XVI - OTHER INFORMATION

None

The data and information given in this MSDS are accurate on the date of preparation. It does not indicate any warranty or representation. We disclaim all liability relating to use of this material since this is beyond our control.



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90393 REV F



A dentin shaded, radiopaque, fluoride releasing, dual cured, strong, flowable, microhybrid composite.

INSTRUCTIONS

StarFill 2B™ was specifically developed for the directed shrinkage technique of posterior composite placement, first described by Dr. Raymond Bertolotti. StarFill 2B™ is also ideal for luting posts, core buildups, crowns, veneers and any application where light transmission is in question. Being a dual cure, StarFill 2B™ can be rapidly cured with a light. Starfill 2B™ contains 61% filler by weight (41% by volume).

MIXING INSTRUCTIONS

A. Automix Syringe (one double barrel)

1. Remove twist off cap and attach automix tip.
2. Depress plunger with smooth, even pressure until no air is left in mix tip.
3. Syringe StarFill 2B™ directly into restoration.
4. Do not remove the automix tip after use. The used tip serves as a convenient seal until the next use.

B. Base & Catalyst Syringes (individual)

1. Hand mix equal portions of the StarFill 2B™ Base and Catalyst.
2. Place StarFill 2B™ using a Centrix needle tip or similar syringe tip.
3. The tips and silicone caps are color coded. It is suggested that white caps be used on white tips and black caps be used on black tips to prevent cross-contamination of base and catalyst.

USE INSTRUCTIONS

Directed Shrinkage Technique for Posterior Composites

StarFill 2B™ is ideal for the "Directed Shrinkage" technique^{1,2,3} for composite placement.

1. Cut conservative prep. Use of Danville's CariesFinder™ or other caries detection dye as a guide is suggested.
2. Etch enamel and dentin for 15 to 30 seconds with a liquid phosphoric acid etchant such as SureEtch™.
3. A highly recommended optional step to reduce sensitivity is to apply Danville's MicroPrime™ desensitising agent for 20 seconds (minimum) penetration time. (Note:

¹Bertolotti R.L. *PP&A Aesthetic Chronicle* 1991; 3, 53-58.
²Ferrari M. *PP&A Aesthetic Chronicle* 1993; 5, 29-36.
³Garberoglio R. et al. *Am J Dent* 1995; 8, 303-307.

Do not use MicroPrime™ with self etch primers.)

4. Apply bonding agent and cure.
5. Apply StarFill 2B™ and allow to self cure for at least 2 1/2 minutes. (To achieve directed shrinkage effect, the minimum depth is a Dycal-like layer which includes the gingival margin.) (Note: StarFill 2B™ can be light cured for faster set but that cure negates the directed shrinkage effect.)
- 6a. Place a light cure posterior composite and cure. (There is no need for bonding agent between the StarFill 2B™ and the overlying composite.

OR

- 6b. A bite form technique, using a sectional matrix system such as Contact Matrix, may be used to form the composite. Place the composite, remove the Contact Ring, apply glycerine gel on the occlusal and have the patient bite into centric occlusion. Cure the composite while the patient's mouth is closed. Have the patient open and cure again.
7. Remove the matrix.
8. Finish and polish.
9. Avoid cross-contamination between patients by replacing mixing tip between patients. Disposable handpiece or syringe plastic barrier sleeves may provide greater prevention of cross-contamination. Insert StarFill 2B™ automix syringe with new tip into barrier sleeve, piercing only the automix tip through the plastic. If used with Centrix tip, follow Centrix directions for use.

STORAGE

Refrigerate for full shelf life. Use at room temperature.

ADDITIONAL NOTES

- 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 having known resin allergies.

MATERIAL SAFETY DATA SHEET

SECTION I - PRODUCT IDENTIFICATION

Company: Danville Materials
3420 Fostoria Way Ste A-200
San Ramon, CA 94583
Phone: (800) 827-7940
Fax: (925) 973-0764
Prepared: January 14, 2013

SECTION II - HAZARD(S) IDENTIFICATION

Chronic, Other: None
Acute Overexposure: Irritation to eyes and skin
Medical Conditions Generally Aggravated by Exposure: None Known
Hygienic Practices: Use good personal hygiene
Primary Route(s) of Exposure: Skin, eye, ingestion

SECTION III - COMPOSITION/INFORMATION ON INGREDIENTS

Material	CAS	% WGT	OSHA PEL	ACGIH TLV
Barium Glass		45-65	15	10
BIS GMA		15-45	N/L	N/L
Glycerin	56-81-5		ND	10mg/m3
Silica/Amorphous	7631-86-9		ND	0.1mg/m3
Blue Food Dye	ND			

(ND = Not Determined NA = Not Applicable NL = Not Listed)

SECTION IV - EMERGENCY AND FIRST AID PROCEDURES

Skin: Wash off affected area with soap and water.
Ingestion: None, essentially non-toxic orally
Eyes: Rinse immediately with plenty of water and seek medical advice.

SECTION V - FIRE-FIGHTING MEASURES

Flash Point: >+104°C
Extinguishing Media: Carbon Dioxide, Foam, Dry Chemical
Special Fire Fighting Procedures: None
Flammable Limits: NA
Unusual Fire and Explosion Hazards: None

SECTION VI - ACCIDENTAL RELEASE MEASURES

None

SECTION VII - SAFE HANDLING AND USE PRECAUTIONS

Spill Management: Use absorbent to collect the material. Wash contaminated surfaces with soap and water.

SECTION VIII - PROTECTION INFORMATION/CONTROL MEASURES

Respiratory: None required
Eye Protection: Safety goggles
Glove: Surgical rubber/PVC gloves
Other Clothing & Equipment: none
Ventilation: None required

1. Identification

Product identifier	StartFill™ 2B	
Other means of identification		
Document number	SDS-024-ZD Rev B	
Recommended use	Dental adhesive.	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Supplier		
Company name	Danville Materials	
Address	2875 Loker Avenue East Carlsbad, CA 92010	
Telephone	1-800-827-7940	
Contact	Customer Service	
E-mail	danvillecs@zestdent.com	
Website	www.zestdent.com	
Emergency telephone number	800-451-8346 / 760-602-8703	

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Sensitization, skin	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements



Signal word	Warning	
Hazard statement	Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.	
Precautionary statement		
Prevention	Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/eye protection/face protection. Avoid release to the environment.	
Response	If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Collect spillage.	
Storage	Store away from incompatible materials.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	
Hazard(s) not otherwise classified (HNOC)	None known.	
Supplemental information	None.	

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Barium glass	Unknown	50 - 70
Ethoxylated bisphenol A dimethacrylate	41637-38-1	5 - 30
Bisphenol A glycidyl methacrylate	1565-94-2	1 - 15
Diurethane dimethacrylate	72869-86-4	1 - 15
Triethylene glycol dimethacrylate	109-16-0	1 - 15

Composition comments All concentrations are in percent by weight. Components not listed are either non-hazardous or are below reportable limits.

The manufacturer has claimed one or more hazardous ingredients as trade secret under the OSHA Hazard Communication Standard. The hazards of this (these) ingredient(s) are given on this SDS.

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

Will burn if involved in a fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Persons susceptible to allergic reactions should not handle this product. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Peroxide (CAS 94-36-0)	PEL	5 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Peroxide (CAS 94-36-0)	TWA	5 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Peroxide (CAS 94-36-0)	TWA	5 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Skin protection

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

None required where adequate ventilation conditions exist. In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state

Paste.

Form	Paste.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	> 20.5 mm ² /s
Viscosity temperature	104 °F (40 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterized.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Peroxide (CAS 94-36-0) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Peroxide (CAS 94-36-0)		
Aquatic		
<i>Acute</i>		
Algae	LC50 Pseudokirchnerella subcapitata	0.0711 mg/l, 72 hours
Fish	EC50 Oncorhynchus mykiss	0.0602 mg/l, 96 hours

Persistence and degradability The major component of the product consists of an inorganic compound which is not biodegradable. For other components of the product no data are available.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Ethoxylated bisphenol A dimethacrylate (CAS 41637-38-1) 5.3 - 5.62

Peroxide (CAS 94-36-0) 3.46

Triethylene glycol dimethacrylate (CAS 109-16-0) 1.88

Mobility in soil No data available for this product.

Other adverse effects None known.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3082

UN proper shipping name Environmentally hazardous substances, liquid, n.o.s. (Diurethane dimethacrylate; Peroxide)

Transport hazard class(es)

Class 9
Subsidiary risk -
Label(s) 9

Packing group III**Environmental hazards****Marine pollutant** Yes**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Special provisions** 8, 146, 335, IB3, T4, TP1, TP29**Packaging exceptions** 155**Packaging non bulk** 203**Packaging bulk** 241**IATA****UN number** UN3082**UN proper shipping name** Environmentally hazardous substance, liquid, n.o.s. (Diurethane dimethacrylate; Peroxide)**Transport hazard class(es)**

Class 9
Subsidiary risk -
Label(s) 9

Packing group III**Environmental hazards** Yes**ERG Code** 9L**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**IMDG****UN number** UN3082**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIURETHANE DIMETHACRYLATE; PEROXIDE)**Transport hazard class(es)**

Class 9
Subsidiary risk -

Packing group III**Environmental hazards****Marine pollutant** Yes**EmS** F-A, S-F**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.**15. Regulatory information****US federal regulations**

This mixture is a product regulated by the FDA. Within the meaning of the OSHA Hazard Communication Standard [29 CFR 1910.1200]: this mixture is considered hazardous.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Skin corrosion or irritation
 Serious eye damage or eye irritation
 Respiratory or skin sensitization

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**US state regulations****US. Massachusetts RTK - Substance List**

Peroxide (CAS 94-36-0)

US. New Jersey Worker and Community Right-to-Know Act

Peroxide (CAS 94-36-0)

US. Pennsylvania Worker and Community Right-to-Know Law

Peroxide (CAS 94-36-0)

US. Rhode Island RTK

Peroxide (CAS 94-36-0)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

16. Other information, including date of preparation or last revision

Issue date	03-May-2018
Revision date	03-December-2018
Version #	02
NFPA ratings	

**Disclaimer**

Danville Materials cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.