



## Material Safety Data Sheet

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**PRODUCT NAME:** 3M™ ESPE™ VITREBOND PLUS LINER A/B KIT

**MANUFACTURER:** 3M

**DIVISION:** 3M ESPE Dental Products

**ADDRESS:** 3M Center  
St. Paul, MN 55144-1000

**EMERGENCY PHONE:** 1-800-364-3577 or (651) 737-6501 (24 hours)

**Issue Date:** 07/09/09

**Supersedes Date:** 04/22/09

**Document Group:** 21-0053-5

### ID Number(s):

70-2010-5771-1, 70-2010-5772-9, 70-2010-7709-9

**This product is a kit or a multipart product which consists of multiple, independently packaged components. An MSDS for each of these components is included. Please do not separate the component MSDSs from this cover page. The document numbers of the MSDSs for components of this product are:**

21-0049-3, 21-0047-7

### Revision Changes:

Kit: Component document group number(s) was modified.

Kit: ID Number(s) was modified.

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have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.



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### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** 3M™ ESPE™ VITREBOND™ PLUS LINER LIQUID B  
**MANUFACTURER:** 3M  
**DIVISION:** 3M ESPE Dental Products

**ADDRESS:** 3M Center  
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

**Issue Date:** 04/22/09  
**Supersedes Date:** 12/13/06

**Document Group:** 21-0047-7

#### Product Use:

Intended Use: Dental product  
Limitations on Use: For use only by dental professionals  
Specific Use: Dental liner/base

### SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
COPOLYMER OF ACRYLIC AND ITACONIC ACIDS	25948-33-8	40 - 50
WATER	7732-18-5	30 - 40
2-HYDROXYETHYL METHACRYLATE (HEMA)	868-77-9	15 - 25

### SECTION 3: HAZARDS IDENTIFICATION

#### 3.1 EMERGENCY OVERVIEW

**Specific Physical Form:** Liquid

**Odor, Color, Grade:** Slight acrylate odor, yellow

**General Physical Form:** Liquid

**Immediate health, physical, and environmental hazards:** May cause allergic skin reaction. This document has been prepared in accordance with the U.S. OSHA Hazard Communication Standard, which requires the inclusion of all known hazards of the product or ingredients regardless of the potential risk. The risks of the hazards communicated in this document may vary depending on the potential for exposure.

### 3.2 POTENTIAL HEALTH EFFECTS

**Eye Contact:**

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

**Skin Contact:**

Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Inhalation:**

This product may have a characteristic odor; however, no adverse health effects are anticipated.

**Ingestion:**

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

## SECTION 4: FIRST AID MEASURES

### 4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

**Eye Contact:** Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

**Skin Contact:** Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

**Inhalation:** No need for first aid is anticipated.

**If Swallowed:** Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

## SECTION 5: FIRE FIGHTING MEASURES

### 5.1 FLAMMABLE PROPERTIES

Autoignition temperature

*Not Applicable*

Flash Point

> 214 °F [*Test Method:* Closed Cup]

Flammable Limits - LEL

*Not Applicable*

Flammable Limits - UEL

*Not Applicable*

## 5.2 EXTINGUISHING MEDIA

Ordinary combustible material. Use fire extinguishers with class A extinguishing agents (e.g., water, foam).

## 5.3 PROTECTION OF FIRE FIGHTERS

**Special Fire Fighting Procedures:** Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

**Unusual Fire and Explosion Hazards:** No unusual fire or explosion hazards are anticipated.

**Note:** See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Accidental Release Measures:** Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Cover, but do not seal for 48 hours. Seal the container. Dispose of collected material as soon as possible.

**In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.**

## SECTION 7: HANDLING AND STORAGE

### 7.1 HANDLING

Avoid eye contact. Avoid skin contact. A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. Acrylates may penetrate commonly-used gloves. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove. Wash hands after handling and before eating.

### 7.2 STORAGE

Store out of direct sunlight. Keep container in well-ventilated area.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 ENGINEERING CONTROLS

Use in a well-ventilated area.

### 8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

#### 8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Safety Glasses with side shields.

#### 8.2.2 Skin Protection

Avoid skin contact. See Section 7.1 for additional information on skin protection.

**8.2.3 Respiratory Protection**

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

**8.2.4 Prevention of Swallowing**

Do not ingest. Wash hands after handling and before eating.

**8.3 EXPOSURE GUIDELINES**

None Established

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Specific Physical Form:	Liquid
Odor, Color, Grade:	Slight acrylate odor, yellow
General Physical Form:	Liquid
Autoignition temperature	<i>Not Applicable</i>
Flash Point	> 214 °F [Test Method: Closed Cup]
Flammable Limits - LEL	<i>Not Applicable</i>
Flammable Limits - UEL	<i>Not Applicable</i>
Boiling point	<i>No Data Available</i>
Density	1.14 g/ml
Vapor Density	<i>No Data Available</i>
Vapor Pressure	<=27 psia [@ 131.0000000000 °F] [Details: MITS data]
Specific Gravity	1.14 [Ref Std: WATER=1]
pH	2.5
Melting point	<i>Not Applicable</i>
Solubility in Water	Complete
Evaporation rate	<i>No Data Available</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	<i>Not Applicable</i>
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>
Viscosity	200 - 300 centistoke

**SECTION 10: STABILITY AND REACTIVITY**

**Stability:** Stable.

**Materials and Conditions to Avoid:** Heat

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**Hazardous Decomposition or By-Products**

Substance

Condition

Carbon monoxide  
Carbon dioxide

During Combustion  
During Combustion

## SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

## SECTION 12: ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION

Not determined.

### CHEMICAL FATE INFORMATION

Not determined.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** Dispose of completely cured (or polymerized) wastes in a sanitary landfill.

As a disposal alternative, incinerate uncured product in an industrial or commercial incinerator. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste.

**EPA Hazardous Waste Number (RCRA):** Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

## SECTION 14: TRANSPORT INFORMATION

LE-F100-0224-3, LE-F100-0224-4, LE-F100-0684-9

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

## SECTION 15: REGULATORY INFORMATION

### US FEDERAL REGULATIONS

Contact 3M for more information.

### 311/312 Hazard Categories:

Fire Hazard - No   Pressure Hazard - No   Reactivity Hazard - No   Immediate Hazard - Yes   Delayed Hazard - No

## STATE REGULATIONS

Contact 3M for more information.

## CHEMICAL INVENTORIES

This material contains one or more substances not listed on the TSCA Inventory. Commercial use of this material is regulated by the FDA.

Contact 3M for more information.

## INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## SECTION 16: OTHER INFORMATION

### NFPA Hazard Classification

**Health:** 2 **Flammability:** 1 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

### Revision Changes:

Section 1: Product name was modified.

Section 1: Product use information was modified.

Section 16: NFPA hazard classification for flammability was modified.

Copyright was modified.

Section 3: Potential effects from skin contact information was modified.

Section 3: Potential effects from inhalation information was modified.

Section 5: Unusual fire and explosion hazard information was modified.

Section 7: Handling information was modified.

Page Heading: Product name was modified.

Section 5: Flash point information was modified.

Sections 3 and 9: Odor, color, grade information was modified.

Section 9: Specific gravity information was modified.



Section 9: Flash point information was modified.  
Section 8: Other skin protection comment was added.  
Section 3: Immediate other hazard(s) was added.  
Sections 3 and 9: Specific physical form information was added.  
Sections 3 and 9: Specific physical form heading was added.  
Section 4: First aid for inhalation - none - was added.  
Section 14: ID Number(s) Template 1 was added.  
Section 2: Ingredient table was added.  
Section 8: Exposure guidelines information - none - was added.  
Section 16: HMIS hazard classification heading was deleted.  
Section 16: HMIS hazard classification for health was deleted.  
Section 16: HMIS hazard classification for flammability was deleted.  
Section 16: HMIS hazard classification for reactivity was deleted.  
Section 16: HMIS hazard classification for protection was deleted.  
Section 4: First aid for inhalation - termination of exposure - was deleted.  
Section 4: First aid for inhalation - medical assistance - was deleted.  
Section 16: HMIS explanation was deleted.

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### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** 3M™ ESPE™ VITREBOND™ PLUS LINER PASTE A

**MANUFACTURER:** 3M

**DIVISION:** 3M ESPE Dental Products

**ADDRESS:** 3M Center  
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

**Issue Date:** 04/22/09

**Supersedes Date:** 12/13/06

**Document Group:** 21-0049-3

#### Product Use:

Intended Use: Dental product  
Limitations on Use: For use only by dental professionals  
Specific Use: Dental liner/base

### SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
SILANE TREATED GLASS	NONE	70 - 80
2-HYDROXYETHYL METHACRYLATE (HEMA)	868-77-9	10 - 20
WATER	7732-18-5	1 - 10
SILANE TREATED SILICA	68909-20-6	< 2
BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA)	1565-94-2	< 2

### SECTION 3: HAZARDS IDENTIFICATION

#### 3.1 EMERGENCY OVERVIEW

**Specific Physical Form:** Paste

**Odor, Color, Grade:** Characteristic odor, Off-white to Yellow

**General Physical Form:** Solid

**Immediate health, physical, and environmental hazards:** May cause allergic skin reaction. This document has been prepared in accordance with the U.S. OSHA Hazard Communication Standard, which requires the inclusion of all known hazards of

the product or ingredients regardless of the potential risk. The risks of the hazards communicated in this document may vary depending on the potential for exposure.

### 3.2 POTENTIAL HEALTH EFFECTS

**Eye Contact:**

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

**Skin Contact:**

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, and itching.

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Inhalation:**

This product may have a characteristic odor; however, no adverse health effects are anticipated.

**Ingestion:**

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

## SECTION 4: FIRST AID MEASURES

### 4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

**Eye Contact:** Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

**Skin Contact:** Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

**Inhalation:** No need for first aid is anticipated.

**If Swallowed:** Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

## SECTION 5: FIRE FIGHTING MEASURES

### 5.1 FLAMMABLE PROPERTIES

Autoignition temperature

*Not Applicable*

Flash Point

*Not Applicable*

Flammable Limits - LEL

*Not Applicable*

Flammable Limits - UEL

*Not Applicable*

## 5.2 EXTINGUISHING MEDIA

Ordinary combustible material. Use fire extinguishers with class A extinguishing agents (e.g., water, foam).

## 5.3 PROTECTION OF FIRE FIGHTERS

**Special Fire Fighting Procedures:** Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

**Unusual Fire and Explosion Hazards:** No unusual fire or explosion hazards are anticipated.

**Note:** See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Accidental Release Measures:** Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Avoid contact with water. Collect as much of the spilled material as possible. Collect the resulting residue containing solution. Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

**In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.**

## SECTION 7: HANDLING AND STORAGE

### 7.1 HANDLING

Avoid skin contact. Avoid eye contact with dust or airborne particles. A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. Acrylates may penetrate commonly-used gloves. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove. Wash hands after handling and before eating.

### 7.2 STORAGE

Store away from heat. Store out of direct sunlight.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 ENGINEERING CONTROLS

Use in a well-ventilated area.

### 8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

#### 8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Safety Glasses with side shields.

#### 8.2.2 Skin Protection

Avoid skin contact. See Section 7.1 for additional information on skin protection.

**8.2.3 Respiratory Protection**

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

**8.2.4 Prevention of Swallowing**

Do not ingest. Wash hands after handling and before eating.

**8.3 EXPOSURE GUIDELINES**

None Established

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Specific Physical Form:	Paste
Odor, Color, Grade:	Characteristic odor, Off-white to Yellow
General Physical Form:	Solid
Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits - LEL	<i>Not Applicable</i>
Flammable Limits - UEL	<i>Not Applicable</i>
Boiling point	<i>Not Applicable</i>
Density	1.9 g/cm <sup>3</sup>
Vapor Density	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Specific Gravity	1.9 [Ref Std: WATER=1]
pH	<i>Not Applicable</i>
Melting point	<i>No Data Available</i>
Solubility in Water	Negligible
Evaporation rate	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	Negligible
VOC Less H <sub>2</sub> O & Exempt Solvents	<i>Not Applicable</i>
Viscosity	>=300000 centistoke [ <i>Test Method:</i> Brookfield]

**SECTION 10: STABILITY AND REACTIVITY**

**Stability:** Stable.

**Materials and Conditions to Avoid:** Heat; Water

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**Hazardous Decomposition or By-Products**

Substance

Condition

Carbon monoxide  
Carbon dioxide

During Combustion  
During Combustion

## SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

## SECTION 12: ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION

Not determined.

### CHEMICAL FATE INFORMATION

Not determined.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** Dispose of completely cured (or polymerized) wastes in a sanitary landfill.

As a disposal alternative, incinerate uncured product in an industrial or commercial incinerator. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste.

**EPA Hazardous Waste Number (RCRA):** Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

## SECTION 14: TRANSPORT INFORMATION

LE-F100-0224-5, LE-F100-0224-6, LE-F100-0688-2

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

## SECTION 15: REGULATORY INFORMATION

### US FEDERAL REGULATIONS

Contact 3M for more information.

### 311/312 Hazard Categories:

Fire Hazard - No    Pressure Hazard - No    Reactivity Hazard - No    Immediate Hazard - Yes    Delayed Hazard - No

## STATE REGULATIONS

Contact 3M for more information.

## CHEMICAL INVENTORIES

This material contains one or more substances not listed on the TSCA Inventory. Commercial use of this material is regulated by the FDA.

Contact 3M for more information.

## INTERNATIONAL REGULATIONS

Contact 3M for more information.

**This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.**

## SECTION 16: OTHER INFORMATION

### NFPA Hazard Classification

**Health:** 2   **Flammability:** 1   **Reactivity:** 0   **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

#### Revision Changes:

Section 1: Product name was modified.

Section 1: Product use information was modified.

Section 16: NFPA hazard classification for flammability was modified.

Copyright was modified.

Section 4: First aid for eye contact - decontamination - was modified.

Section 4: First aid for eye contact - medical assistance - was modified.

Section 3: Potential effects from eye contact was modified.

Section 3: Potential effects from skin contact information was modified.

Section 3: Potential effects from inhalation information was modified.

Section 5: Unusual fire and explosion hazard information was modified.

Section 7: Handling information was modified.

Page Heading: Product name was modified.

Section 9: Density information was modified.  
 Sections 3 and 9: Odor, color, grade information was modified.  
 Section 9: Property description for optional properties was modified.  
 Section 9: Specific gravity information was modified.  
 Section 9: Solubility in water text was modified.  
 Section 8: Other skin protection comment was added.  
 Section 3: Immediate other hazard(s) was added.  
 Section 4: First aid for inhalation - none - was added.  
 Section 14: ID Number(s) Template 1 was added.  
 Section 2: Ingredient table was added.  
 Section 8: Exposure guidelines information - none - was added.  
 Section 16: HMIS hazard classification heading was deleted.  
 Section 16: HMIS hazard classification for health was deleted.  
 Section 16: HMIS hazard classification for flammability was deleted.  
 Section 16: HMIS hazard classification for reactivity was deleted.  
 Section 16: HMIS hazard classification for protection was deleted.  
 Section 3: Immediate eye hazard(s) was deleted.  
 Section 4: First aid for inhalation - termination of exposure - was deleted.  
 Section 4: First aid for inhalation - medical assistance - was deleted.  
 Section 16: HMIS explanation was deleted.  
 Section 9: Solubility in water value was deleted.

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