Material Safety Data Sheet

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PRODUCT NAME: 4720 3M(TM) ESPE(TM) FILTEK(TM) P-60 POSTERIOR RESTORATIVE INTRO 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: 03/05/2004
Supercedes Date: Initial Issue

Document Group: 19-0958-9

ID Number(s):
70-2010-3724-2

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:

08-7419-8, 18-9025-0, 10-4782-8

No revision information is available.

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Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ ESPE™ FILTEK™ P60 POSTERIOR RESTORATIVE PASTE
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: 05/05/09
Supercedes Date: 05/08/08
Document Group: 08-7419-8

Product Use:
Intended Use: Dental Product
Limitations on Use: For use only by dental professionals
Specific Use: Dental restorative

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
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<tbody>
<tr>
<td>SILANE TREATED CERAMIC</td>
<td>444758-98-9</td>
<td>75 - 85</td>
</tr>
<tr>
<td>BISPHENOL A POLYETHYLENE GLYCOL DIETHER DIMETHACRYLATE (BISMA6)</td>
<td>41637-38-1</td>
<td>1 - 10</td>
</tr>
<tr>
<td>DIURETHANE DIMETHACRYLATE (UDMA)</td>
<td>72869-86-4</td>
<td>1 - 10</td>
</tr>
<tr>
<td>BISPHENOL A DIOXYL ETHER DIMETHACRYLATE (BISGMA)</td>
<td>1565-94-2</td>
<td>1 - 10</td>
</tr>
<tr>
<td>TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA)</td>
<td>109-16-0</td>
<td>&lt; 5</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Paste
Odor, Color, Grade: Slight acrylate odor, various shades
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:
Mild Eye Irritation: Signs/symptoms may include redness, pain, and tearing.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoignition temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Flammable Limits - LEL</td>
<td>No Data Available</td>
</tr>
</tbody>
</table>
5.2 EXTINGUISHING MEDIA
Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

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. Ventilate the area with fresh air. Collect as much of the spilled material as possible. Clean up residue. 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 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 in a cool place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Not applicable.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Physical Form:</td>
<td>Paste</td>
</tr>
<tr>
<td>Odor, Color, Grade:</td>
<td>Slight acrylate odor, various shades</td>
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<td>General Physical Form:</td>
<td>Solid</td>
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<tr>
<td>Autoignition temperature</td>
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</tr>
<tr>
<td>Flash Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Flammable Limits - LEL</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flammable Limits - UEL</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Density</td>
<td>2.1 g/cm3</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
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<tr>
<td>pH</td>
<td>Not Applicable</td>
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<tr>
<td>Melting point</td>
<td>No Data Available</td>
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<td>Solubility in Water</td>
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<tr>
<td>Evaporation rate</td>
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<tr>
<td>Volatile Organic Compounds</td>
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</tr>
<tr>
<td>Percent volatile</td>
<td>No Data Available</td>
</tr>
<tr>
<td>VOC Less H2O &amp; Exempt Solvents</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Approximately 300000 centipoise</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: None known

Hazardous Polymerization: Hazardous polymerization will not occur.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Carbon monoxide During Combustion
Carbon dioxide 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: Incinerate in an industrial or commercial facility in the presence of a combustible material. 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

ID Number(s):
70-2010-2550-2, 70-2010-2551-0, 70-2010-2552-8, 70-2010-2580-9, 70-2010-2581-7, 70-2010-2582-5, 70-2010-2605-4, 70-2010-2606-2, 70-2010-2607-0, 70-2010-5197-9, 70-2010-5198-7, 70-2010-5199-5

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 8: Other skin protection comment was modified.
Copyright was modified.
Section 3: Potential effects from eye contact 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.
Section 8: Prevention of swallowing information was modified.
Page Heading: Product name was modified.
Section 9: Density information was modified.
Section 9: Property description for optional properties was modified.
Section 9: Solubility in water text was modified.
Section 14: ID Number(s) Template 1 was modified.
Section 2: Ingredient table was modified.
Section 3: Immediate other hazard(s) was added.
Section 4: First aid for inhalation - none - was added.
Section 4: First aid for inhalation - termination of exposure - was deleted.
Section 4: First aid for inhalation - medical assistance - was deleted.

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 7523 3M(TM) ESPE(TM) SCOTCHBOND(TM) ETCHANT DELIVERY SYSTEM
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: 02/26/2009
Supercedes Date: 06/12/2007
Document Group: 10-4782-8

Product Use:
Intended Use: Dental Product
Limitations on Use: For use only by dental professionals
Specific Use: Dental Etchant

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
<td>55 - 65</td>
</tr>
<tr>
<td>PHOSPHORIC ACID</td>
<td>7664-38-2</td>
<td>30 - 40</td>
</tr>
<tr>
<td>SYNTHETIC AMORPHOUS SILICA</td>
<td>112945-52-5</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Gel
Odor, Color, Grade: Slight characteristic odor, blue
General Physical Form: Liquid
Immediate health, physical, and environmental hazards: May cause chemical eye burns. May cause chemical skin burns. May cause chemical gastrointestinal burns. 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:
Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin Contact:
Corrosive (Skin Burns): Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion:
May be harmful if swallowed.
Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen.

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:  Immediately flush eyes with large amounts of water for at least 15 minutes.  Get immediate medical attention.

Skin Contact:  Remove contaminated clothing and shoes.  Immediately flush skin with large amounts of water for at least 15 minutes.  Get immediate medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation:  Remove person to fresh air.  If signs/symptoms develop, get medical attention.

If Swallowed:  Do not induce vomiting. Give victim two glasses of water.  Never give anything by mouth to an unconscious person. Get immediate medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature  No Data Available
Flash Point  Not Applicable
Flammable Limits - LEL  Not Applicable
Flammable Limits - UEL  Not Applicable
5.2 EXTINGUISHING MEDIA
Non-combustible. Choose material suitable for surrounding fire.

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: Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. 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 large spills, if necessary, get assistance from professional spill clean up team. For small spills, carefully cover the spill with soda ash (sodium carbonate) or sodium bicarbonate. Work from around the perimeter inward. Avoid splashing. Add enough water to ease mixing and stir. Continue stirring and adding water and neutralizing agent until the reaction stops. Let cool before collecting. Or use a commercially available ‘Acid spill’ clean-up kit. Follow the kit directions exactly, as specified. 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. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard. Collect as much of the spilled material as possible. Clean up residue with a dilute solution (approximately 1 to 5%) of soda ash (sodium carbonate) or baking soda (sodium bicarbonate) in water. Collect the resulting residue containing solution. Place in a metal container approved for use in transportation by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene. Cover, but do not seal for 48 hours. 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. Wash hands after handling and before eating.

7.2 STORAGE
Store under normal warehouse conditions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Not applicable.

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.

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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Authority</th>
<th>Type</th>
<th>Limit</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOSPHORIC ACID</td>
<td>ACGIH</td>
<td>TWA</td>
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</tr>
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<td>PHOSPHORIC ACID</td>
<td>ACGIH</td>
<td>STEL</td>
<td>3 mg/m³</td>
<td></td>
</tr>
<tr>
<td>PHOSPHORIC ACID</td>
<td>OSHA</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Table Z-1A</td>
</tr>
<tr>
<td>PHOSPHORIC ACID</td>
<td>OSHA</td>
<td>STEL</td>
<td>3 mg/m³</td>
<td>Table Z-1A</td>
</tr>
</tbody>
</table>

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form: Gel
Odor, Color, Grade: Slight characteristic odor, blue
General Physical Form: Liquid
Autoignition temperature: No Data Available
Flash Point: Not Applicable
Flammable Limits - LEL: Not Applicable
Flammable Limits - UEL: Not Applicable
Boiling point: >= 212 ºF
Density: 1.28 g/ml
Vapor Density: No Data Available

Vapor Pressure: No Data Available

Specific Gravity: 1.28 [Ref Std: WATER=1]
pH: 1.0
Melting point: Not Applicable

Solubility in Water: Complete
Evaporation rate: No Data Available
Volatile Organic Compounds: No Data Available
Percent volatile: No Data Available
VOC Less H2O & Exempt Solvents: No Data Available
Viscosity: 100,000 centipoise
SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Strong bases

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<table>
<thead>
<tr>
<th>Substance</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon monoxide</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>During Combustion</td>
</tr>
</tbody>
</table>

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: Incinerate in a permitted hazardous waste incinerator in the presence of a combustible material. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

EPA Hazardous Waste Number (RCRA): D002 (Corrosive)

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

SECTION 14: TRANSPORT INFORMATION

ID Number(s):
LE-F100-0070-1, LE-F100-0182-1, LE-F100-0350-8, 70-2010-1442-3, 70-2010-5157-3, FH-5000-3624-6, FH-5000-3625-3, FH-5000-4220-2
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: 3
- Flammability: 0
- Reactivity: 0
- Special Hazards: None
- Corrosive: Yes

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 use information was modified.
Section 16: NFPA hazard classification for health was modified.
Copyright was modified.
Section 3: Potential effects from inhalation information was modified.
Section 3: Potential effects from ingestion information was modified.
Section 5: Unusual fire and explosion hazard information was modified.
Section 6: Release measures information was modified.
Section 7: Handling information was modified.
Section 7: Storage information was modified.
Section 8: Prevention of swallowing information was modified.
Section 9: Density information was modified.
Section 9: Vapor density value was modified.
Section 9: Vapor pressure value was modified.
Section 5: Autoignition temperature 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: pH information was modified.
Section 9: Autoignition temperature information was modified.
Section 3: Immediate ingestion hazard(s) was added.
Section 4: First aid for inhalation - termination of exposure - was added.
Section 4: First aid for inhalation - medical assistance - was added.
Section 3: Immediate other hazard(s) was added.
Section 14: ID Number Heading Template 1 was added.
Section 14: ID Number(s) Template 1 was added.
Section 2: Ingredient table was added.
Section 8: Exposure guidelines ingredient information was added.
Section 8: Exposure guidelines data source legend was added.
Section 4: First aid for inhalation - none - was deleted.

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Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) ESPE(TM) ADPER(TM) SINGLE BOND PLUS
MANUFACTURER: 3M
DIVISION: 3M ESPE Dental Products
ADDRESS: 3M Center
St. Paul, MN  55144-1000

Issue Date: 05/29/2008
Supercedes Date: 07/09/2004

Product Use:
Intended Use: Dental Product
Limitations on Use: For use only by dental professionals
Specific Use: Dental adhesive

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL ALCOHOL</td>
<td>64-17-5</td>
<td>25 - 35</td>
</tr>
<tr>
<td>SILANE TREATED SILICA (NANOFILLER)</td>
<td>None</td>
<td>10 - 20</td>
</tr>
<tr>
<td>BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA)</td>
<td>1565-94-2</td>
<td>10 - 20</td>
</tr>
<tr>
<td>2-HYDROXYETHYL METHACRYLATE</td>
<td>868-77-9</td>
<td>5 - 15</td>
</tr>
<tr>
<td>GLYCEROL 1,3-DIMETHACRYLATE</td>
<td>1830-78-0</td>
<td>5 - 10</td>
</tr>
<tr>
<td>COPOLYMER OF ACRYLIC AND ITACONIC ACIDS</td>
<td>25948-33-8</td>
<td>5 - 10</td>
</tr>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
<td>&lt; 5</td>
</tr>
<tr>
<td>DIURETHANE DIMETHACRYLATE</td>
<td>72869-86-4</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Liquid
Odor, Color, Grade: Slight acrylate odor, white to clear in color
General Physical Form: Liquid
Immediate health, physical, and environmental hazards: Flammable liquid and vapor. Closed containers exposed to heat from
fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back. May cause allergic skin reaction. May cause target organ effects.

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.

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

**Inhalation:**
Upper Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

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

May be absorbed following ingestion and cause target organ effects.

**Target Organ Effects:**
Prolonged or repeated exposure, above recommended guidelines, may cause:
   Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

NOTE: This product contains ethanol. In IARC published Monograph No. 44, entitled, "Alcohol Drinking", the carcinogenicity of ethanol was determined based on chronic exposure to ethanol through human consumption of alcoholic beverages. This is not an expected effect during the foreseeable use of this product.

**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. 
attention. Wash contaminated clothing and clean shoes before reuse.

**Inhalation:** Remove person to fresh air. If signs/symptoms develop, get medical attention.

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

### SECTION 5: FIRE FIGHTING MEASURES

#### 5.1 FLAMMABLE PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoignition temperature</td>
<td>410 ºC</td>
</tr>
<tr>
<td>Flash Point</td>
<td>18.5 ºC [Test Method: Closed Cup]</td>
</tr>
<tr>
<td>Flammable Limits - LEL</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flammable Limits - UEL</td>
<td>No Data Available</td>
</tr>
</tbody>
</table>

#### 5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

#### 5.3 PROTECTION OF FIRE FIGHTERS

**Special Fire Fighting Procedures:** Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

**Unusual Fire and Explosion Hazards:** Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

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

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**Accidental Release Measures:** Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Ventilate the area with fresh air. Contain spill. Cover with absorbent material. Collect as much of the spilled material as possible. Clean up residue. Collect the resulting residue containing solution. 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

Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. 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.

#### 7.2 STORAGE
Store away from heat. Store out of direct sunlight. Keep container tightly closed.

**SECTION 8: EXPOSURE CONTROLS/PERSOANAL PROTECTION**

**8.1 ENGINEERING CONTROLS**
Not applicable.

**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.

**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.

**8.3 EXPOSURE GUIDELINES**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Authority</th>
<th>Type</th>
<th>Limit</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL ALCOHOL</td>
<td>ACGIH</td>
<td>TWA</td>
<td>1000 ppm</td>
<td>Table A4</td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>OSHA</td>
<td>TWA</td>
<td>1000 ppm</td>
<td>Table Z-1</td>
</tr>
</tbody>
</table>

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

- **Specific Physical Form:** Liquid
- **Odor, Color, Grade:** Slight acrylate odor, white to clear in color
- **General Physical Form:** Liquid
- **Autoignition temperature:** 410 ºC
- **Flash Point:** 18.5 ºC [Test Method: Closed Cup]
- **Flammable Limits - LEL:** No Data Available
- **Flammable Limits - UEL:** No Data Available
- **Boiling point:** 78 ºC
- **Density:** 1.075 g/ml
- **Vapor Density:** No Data Available
- **Vapor Pressure:** No Data Available
Specific Gravity: 1.075  [Ref Std: WATER=1]  
ph: No Data Available  
Melting point: Not Applicable  
Solubility in Water: Negligible

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.
Materials and Conditions to Avoid: Heat; Sparks and/or flames
Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon monoxide</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>During Combustion</td>
</tr>
</tbody>
</table>

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: Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

Since regulations vary, consult applicable regulations or authorities before disposal.
SECTION 14: TRANSPORT INFORMATION

ID Number(s):
LE-F100-0114-1, 70-2010-3673-1

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

STATE REGULATIONS
Contact 3M for more information.

CHEMICAL INVENTORIES
This material is not listed on the TSCA inventory and should be used for research and development purposes only under the direct supervision of a technically qualified individual.

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: 2  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 use information was modified.
Copyright was modified.
Section 7: Storage information was modified.
Section 14: ID Number Heading Template 1 was added.
Section 14: ID Number(s) Template 1 was added.
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