Material Safety Data Sheet

Copyright, 2014, 3M Company. All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

**PRODUCT NAME:** 3M™ ESPE™ KETAC-SILVER APLICAP  
**MANUFACTURER:** 3M  
**DIVISION:** 3M ESPE Dental Products

**ADDRESS:** 3M Center, St. Paul, MN 55144-1000, USA  
**Telephone:** 1-888-3M HELPS (1-888-364-3577)

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

**Issue Date:** 04/03/14  
**Supercedes Date:** 10/29/12  
**Document Group:** 16-2712-4

**ID Number(s):**

70-2011-0132-9, 70-2011-0133-7, 70-2011-0446-3, 70-2011-4281-0

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

26-9878-5, 30-8227-8

Revision Changes:

Section 16: Disclaimer (first paragraph) information was modified.  
Section 16: Disclaimer (second paragraph) information was modified.  
Kit: Component heading paragraph information was modified.  
Kit: Component document group number(s) information was modified.  
Page Heading: Product name information was modified.  
Kit: Product name information was modified.  
Kit: ID Number(s) information was modified.  
Section 16: Web address information was modified.  
Section 1: Address information was modified.  
Copyright information was modified.  
Telephone header information was modified.
Company Telephone information was modified.

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may 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 SDS available directly from 3M.

3M USA SDSs are available at www.3M.com
Material Safety Data Sheet

Copyright, 2012, 3M Company. All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ ESPE™ KETAC™ SILVER APLICAP™ LIQUID
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: 09/14/12
Supercedes Date: 02/11/10
Document Group: 26-9878-5

Product Use:
- Intended Use: Dental Product
- Limitations on Use: For use only by dental professionals.
- Specific Use: Part of a filling material

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>40 - 60</td>
</tr>
<tr>
<td>COPOLYMER OF ACRYLIC ACID - MALEIC ACID</td>
<td>29132-58-9</td>
<td>30 - 50</td>
</tr>
<tr>
<td>TARTARIC ACID</td>
<td>87-69-4</td>
<td>5 - 15</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Liquid
Odor, Color, Grade: slight characteristic odor, colorless liquid
General Physical Form: Liquid
Immediate health, physical, and environmental hazards: 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:
Contact with the skin during product use is not expected to result in significant irritation.

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

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:  Wash affected area with soap and water.  If signs/symptoms develop, get medical attention.
Inhalation:  Remove person to fresh air.  If signs/symptoms develop, get medical attention.
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>No flash point</td>
</tr>
<tr>
<td>Flammable Limits(LEL)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Flammable Limits(UEL)</td>
<td>Not Applicable</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
6.1. Personal precautions, protective equipment and emergency procedures
Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode.

6.2. Environmental precautions
Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods
Observe precautions from other sections. Call 3M HELPS line (1-800-364-3577) for more information on handling and managing the spill. Contain spill. 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. Clean up residue with water.

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 breathing of vapors, mists or spray. Avoid prolonged or repeated skin contact.

7.2 STORAGE
Store away from heat. Store away from areas where product may come into contact with food or pharmaceuticals.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Use with appropriate local exhaust ventilation. Use in an enclosed process area is recommended. 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 prolonged or repeated skin contact.

8.2.3 Respiratory Protection
Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection. Avoid breathing of vapors, mists or spray.

8.2.4 Prevention of Swallowing
Not applicable. Do not ingest.

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><strong>Specific Physical Form:</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Odor, Color, Grade:</strong></td>
<td>slight characteristic odor, colorless liquid</td>
</tr>
<tr>
<td><strong>General Physical Form:</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>No Data Available</td>
</tr>
<tr>
<td><strong>Flash Point</strong></td>
<td>No flash point</td>
</tr>
<tr>
<td><strong>Flammable Limits (LEL)</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Flammable Limits (UEL)</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Boiling Point</strong></td>
<td>Approximately 100</td>
</tr>
<tr>
<td><strong>Vapor Density</strong></td>
<td>&lt;=1.0 [Ref Std: AIR=1]</td>
</tr>
<tr>
<td><strong>Vapor Pressure</strong></td>
<td>16 mmHg [Ref Std: AIR=1]</td>
</tr>
<tr>
<td><strong>Specific Gravity</strong></td>
<td>&gt;=1.0 [Ref Std: WATER=1]</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No Data Available</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>No Data Available</td>
</tr>
<tr>
<td><strong>Solubility in Water</strong></td>
<td>Complete</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>&lt;=1.0 [Ref Std: BUOAC=1]</td>
</tr>
<tr>
<td><strong>Volatile Organic Compounds</strong></td>
<td>No Data Available</td>
</tr>
<tr>
<td><strong>Kow - Oct/Water partition coef</strong></td>
<td>No Data Available</td>
</tr>
<tr>
<td><strong>Percent volatile</strong></td>
<td>No Data Available</td>
</tr>
<tr>
<td><strong>VOC Less H2O &amp; Exempt Solvents</strong></td>
<td>No Data Available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>No Data Available</td>
</tr>
</tbody>
</table>

**SECTION 10: STABILITY AND REACTIVITY**

**Stability:** Stable.

**Materials and Conditions to Avoid:**

1. **Conditions to avoid**
   - None known

2. **Materials to avoid**
   - None known

**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: Dispose of waste product in a facility permitted to accept chemical waste. As a disposal alternative, incinerate in an industrial or commercial facility in the presence of a combustible material.

EPA Hazardous Waste Number (RCRA): Not regulated

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

SECTION 14: TRANSPORT INFORMATION

LE-F100-0706-4

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

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.
SECTION 16: OTHER INFORMATION

NFPA Hazard Classification
Health: 1  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 use information was modified.
Section 16: Disclaimer (second paragraph) was modified.
Section 3: Potential effects from eye contact was modified.
Section 3: Potential effects from skin contact information was modified.
Section 7: Storage information was modified.
Section 8: Engineering controls information was modified.
Section 8: Prevention of swallowing information was modified.
Section 10: Hazardous decomposition or by-products table was modified.
Section 13: Waste disposal method information was modified.
Section 8: Eye/face protection information was modified.
Section 14: Transportation legal text was modified.
Section 9: Vapor density value was modified.
Section 9: Vapor pressure value was modified.
Section 9: Boiling point information was modified.
Section 5: Flammable limits (UE) information was modified.
Section 5: Flammable limits (LEL) information was modified.
Section 5: Autoignition temperature information was modified.
Section 5: Flash point 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: Melting point information was modified.
Section 9: Solubility in water text was modified.
Section 1: Initial issue message was modified.
Section 9: Flash point information was modified.
Section 9: Flammable limits (LEL) information was modified.
Section 9: Flammable limits (UEL) information was modified.
Section 9: Autoignition temperature information was modified.
Section 2: Ingredient table was modified.
Section 6: Personal precautions information was modified.
Section 6: Environmental procedures information was modified.
Section 10: Materials to avoid physical property was modified.
Section 10: Conditions to avoid physical property was modified.
Section 6: 6.2. Environmental precautions heading was added.
Section 6: 6.1. Personal precautions, protective equipment and emergency procedures heading was added.
Section 16: Web address was added.
Section 1: Address was added.
Copyright was added.
Company logo was added.
Section 6: Clean-up methods heading was added.
Telephone header was added.
Company Telephone was added.
Section 1: Emergency phone information was added.
Section 1: Emergency phone information was deleted.
Company Logo was deleted.
Copyright was deleted.
Section 16: Web address heading was deleted.
Section 6: Release measures heading was deleted.
Section 9: Property description for required properties was deleted.
Section 1: Address line 1 was deleted.
Section 1: Address line 2 was deleted.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may 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

3M USA MSDSs are available at www.3M.com
Material Safety Data Sheet

Copyright, 2012, 3M Company. All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ ESPE™ KETAC SILVER APLICAP POWDER
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: 10/24/12
Supercedes Date: Initial Issue
Document Group: 30-8227-8

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>
</thead>
<tbody>
<tr>
<td>SILVER</td>
<td>7440-22-4</td>
<td>45 - 55</td>
</tr>
<tr>
<td>GLASS POWDER</td>
<td>65997-17-3</td>
<td>40 - 50</td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>13463-67-7</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Powder
Odor, Color, Grade: Silver-gray, odorless
General Physical Form: Solid
Immediate health, physical, and environmental hazards: Contains a chemical or chemicals which can cause cancer. 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:
Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

Skin Contact:
Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Prolonged or repeated exposure may cause:
Dermal Effects: Signs/symptoms may include changes in skin pigmentation and/or coloration.

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

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

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>Class Description</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>13463-67-7</td>
<td>Grp. 2B: Possible human carc.</td>
<td>International Agency for Research on Cancer</td>
</tr>
</tbody>
</table>

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:  Wash affected area with soap and water.  If signs/symptoms develop, get medical attention.
Inhalation:  Remove person to fresh air.  If signs/symptoms develop, get medical attention.
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>No flash point</td>
</tr>
<tr>
<td>Flammable Limits(LED)</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

Material will not burn.

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: Not applicable.

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode.

6.2. Environmental precautions
Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods
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. Contain spill. Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up. Clean up residue.

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 prolonged or repeated skin contact.

7.2 STORAGE
Store away from heat. Store out of direct sunlight.

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 prolonged or repeated skin contact. Gloves not normally required.

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
Not applicable. 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>GLASS POWDER</td>
<td>Manufacturer determined</td>
<td>TWA, as dust</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>SILVER</td>
<td>ACGIH</td>
<td>TWA, as dust and fume</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>SILVER</td>
<td>OSHA</td>
<td>TWA, as Ag</td>
<td>0.01 mg/m³</td>
<td></td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>ACGIH</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>CMRG</td>
<td>TWA, as respirable dust</td>
<td>5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>OSHA</td>
<td>TWA, as total dust</td>
<td>15 mg/m³</td>
<td></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: Powder
Odor, Color, Grade: Silver-gray, odorless
General Physical Form: Solid
Autoignition temperature: No Data Available
Flash Point: No flash point
Flammable Limits (LEL): No Data Available
Flammable Limits (UEL): No Data Available
Boiling Point: No Data Available
Vapor Density: No Data Available
Vapor Pressure: Not Applicable
Specific Gravity: >=1 [Ref Std: WATER=1]
pH: Not Applicable
Melting point: No Data Available
Solubility in Water: Nil
Evaporation rate: Not Applicable
Volatile Organic Compounds: Not Applicable
Kow - Oct/Water partition coeef: No Data Available
Percent volatile: Not Applicable
VOC Less H2O & Exempt Solvents: Not Applicable
Viscosity: Not Applicable
SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
Heat

10.2 Materials to avoid
None known

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>Irritant Vapors or Gases</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


EPA Hazardous Waste Number (RCRA): D011 (Silver)

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

SECTION 14: TRANSPORT INFORMATION

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.
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  Deferred Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILVER</td>
<td>7440-22-4</td>
<td>45 - 55</td>
</tr>
<tr>
<td>SILVER (Silver)</td>
<td>7440-22-4</td>
<td>45 - 55</td>
</tr>
</tbody>
</table>

STATE REGULATIONS
Contact 3M for more information.

CALIFORNIA PROPOSITION 65

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>13463-67-7</td>
<td><strong>Carcinogen</strong></td>
</tr>
</tbody>
</table>

** WARNING: contains a chemical which can cause cancer.

CHEMICAL INVENTORIES

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS. 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: 1  Flammability: 0  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.

No revision information is available.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of
use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may 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

3M USA MSDSs are available at www.3M.com