

SAFETY DATA SHEETS

This SDS packet was issued with item:

075034418

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

075034400 075034426



Safety Data Sheet

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| | | | |
|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-9413-5 | Version Number: | 1.01 |
| Issue Date: | 04/15/15 | Supersedes Date: | 08/30/11 |

Product identifier

3M™ ESPE™ RelyX™ Ultimate Trial kit

ID Number(s):

70-2011-3871-9, 70-2011-3873-5

Recommended use

Dental Product, Adhesive Resin cement

Restrictions on use

For use only by dental professionals.

Supplier's details

| | |
|----------------------|---|
| 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 telephone number

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

This product is a kit or a multipart product which consists of multiple, independently packaged components. A Safety Data Sheet (SDS), Article Information Sheet (AIS), or Article Information Letter (AIL) for each of these components is included. Please do not separate the component documents from this cover page. The document numbers for components of this product are:

29-9002-6, 29-8287-4, 29-8286-6, 29-9001-8

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| | | | |
|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-9001-8 | Version Number: | 3.00 |
| Issue Date: | 03/24/15 | Supersedes Date: | 09/02/14 |

SECTION 1: Identification

1.1. Product identifier

3M™ ESPE™ RelyX™ Ultimate Base Paste

Product Identification Numbers

LE-F100-1018-8

1.2. Recommended use and restrictions on use

Recommended use

Dental Product, Adhesive resin cement.

Restrictions on use

For use only by dental professionals.

1.3. Supplier's details

| | |
|----------------------|---|
| 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) |

1.4. Emergency telephone number

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

SECTION 2: Hazard identification

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.

2.1. Hazard classification

Skin Sensitizer: Category 1.

2.2. Label elements

Signal word

Warning

Symbols

Exclamation mark |

Pictograms**Hazard Statements**

May cause an allergic skin reaction.

Precautionary Statements**Prevention:**

Wear protective gloves.

Contaminated work clothing must not be allowed out of the workplace.

Response:

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---|-------------------|------------------------|
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material | None | 50 - 60 Trade Secret * |
| 2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE | 1224866-76-5 | 20 - 30 Trade Secret * |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | 109-16-0 | 10 - 20 Trade Secret * |
| SILANE TREATED SILICA | 68909-20-6 | 1 - 10 Trade Secret * |
| OXIDE GLASS CHEMICALS (non-fibrous) | 65997-17-3 | < 3 Trade Secret * |
| SODIUM PERSULFATE | 7775-27-1 | < 1 |
| TERT-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE | 13122-18-4 | < 0.25 Trade Secret * |

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products**Substance**

Carbon monoxide
Carbon dioxide
Irritant Vapors or Gases

Condition

During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

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. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

| Ingredient | C.A.S. No. | Agency | Limit type | Additional Comments |
|--|------------|----------------------------|---|---------------------|
| OXIDE GLASS CHEMICALS (non-fibrous) | 65997-17-3 | Manufacturer determined | TWA(as dust):10 mg/m ³ | |
| SILICA, AMORPHOUS | 68909-20-6 | OSHA | TWA concentration:0.8 mg/m ³ ;TWA:20 millions of particles/cu. ft. | |
| PERSULFATE COMPOUNDS | 7775-27-1 | ACGIH | TWA(as persulfate):0.1 mg/m ³ | |

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use in a well-ventilated area.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Safety Glasses with side shields

Skin/hand protection

See Section 7.1 for additional information on skin protection.

Respiratory protection

None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form: Solid

Specific Physical Form: Paste

| | |
|--|---|
| Odor, Color, Grade: | toothcolored paste with slight acrylic odor |
| Odor threshold | <i>No Data Available</i> |
| pH | <i>Not Applicable</i> |
| Melting point | <i>No Data Available</i> |
| Boiling Point | <i>No Data Available</i> |
| Flash Point | No flash point |
| Evaporation rate | <i>No Data Available</i> |
| Flammability (solid, gas) | Not Classified |
| Flammable Limits(LEL) | <i>No Data Available</i> |
| Flammable Limits(UEL) | <i>No Data Available</i> |
| Vapor Pressure | <i>No Data Available</i> |
| Vapor Density | <i>No Data Available</i> |
| Density | 2 - 2.2 g/cm ³ |
| Specific Gravity | 2 - 2.2 [Ref Std: WATER=1] |
| Solubility in Water | Negligible |
| Solubility- non-water | <i>No Data Available</i> |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i> |
| Autoignition temperature | <i>No Data Available</i> |
| Decomposition temperature | <i>No Data Available</i> |
| Viscosity | <i>No Data Available</i> |
| Volatile Organic Compounds | <i>No Data Available</i> |

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

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.

The information below represents toxicological information associated with the individual components of the uncured product. Once properly mixed and/or cured, the product is safe for its intended use.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

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

Skin Contact:

Mild 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.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

May be harmful if swallowed.

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

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

| Name | Route | Species | Value |
|---|--------------------------------|------------------------|---|
| Overall product | Ingestion | | No data available; calculated ATE 2,000 - 5,000 mg/kg |
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| 2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE | Ingestion | Rat | LD50 > 2,000 mg/kg |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Dermal | Professional judgement | LD50 estimated to be > 5,000 mg/kg |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Ingestion | Rat | LD50 10,837 mg/kg |
| SILANE TREATED SILICA | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| SILANE TREATED SILICA | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| SILANE TREATED SILICA | Ingestion | Rat | LD50 > 5,110 mg/kg |
| OXIDE GLASS CHEMICALS (non-fibrous) | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| OXIDE GLASS CHEMICALS (non-fibrous) | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| SODIUM PERSULFATE | Dermal | Rabbit | LD50 > 10,000 mg/kg |
| SODIUM PERSULFATE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 47.93 mg/l |

| | | | |
|--|--------------------------------|-----|--------------------|
| SODIUM PERSULFATE | Ingestion | Rat | LD50 895 mg/kg |
| TERT-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE | Dermal | Rat | LD50 > 2,000 mg/kg |
| TERT-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.8 mg/l |
| TERT-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE | Ingestion | Rat | LD50 12,905 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|--|------------------------|---------------------------|
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material | Professional judgement | No significant irritation |
| 2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE | Rabbit | Minimal irritation |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Guinea pig | Mild irritant |
| SILANE TREATED SILICA | Rabbit | No significant irritation |
| OXIDE GLASS CHEMICALS (non-fibrous) | Professional judgement | No significant irritation |
| TERT-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE | Rabbit | No significant irritation |

Serious Eye Damage/Irritation

| Name | Species | Value |
|--|------------------------|---------------------------|
| Overall product | | No significant irritation |
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-3-(trimethoxysilyl)propyl ester (2530-85-0) and phenyltrimethoxy silane (2996-92-1), bulk material | Professional judgement | No significant irritation |
| 2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE | Rabbit | Corrosive |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Professional judgement | Moderate irritant |
| SILANE TREATED SILICA | Rabbit | No significant irritation |
| OXIDE GLASS CHEMICALS (non-fibrous) | Professional judgement | No significant irritation |
| TERT-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE | Rabbit | No significant irritation |

Skin Sensitization

| Name | Species | Value |
|--|------------------|-----------------|
| 2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE | Guinea pig | Not sensitizing |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Human and animal | Sensitizing |
| SILANE TREATED SILICA | Human and animal | Not sensitizing |
| TERT-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE | Guinea pig | Sensitizing |

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

| Name | Route | Value |
|--|----------|--|
| 2-PROPENOIC ACID, 2-METHYL-, 1,1'-[1-(HYDROXYMETHYL)-1,2-ETHANEDIYL] ESTER, REACTION PRODUCTS WITH 2-HYDROXY-1,3-PROPANEDIYL DIMETHACRYLATE AND PHOSPHORUS OXIDE | In Vitro | Not mutagenic |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| SILANE TREATED SILICA | In Vitro | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|--|---------------|---------|--|
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Dermal | Mouse | Not carcinogenic |
| SILANE TREATED SILICA | Not Specified | Mouse | Some positive data exist, but the data are not sufficient for classification |

Reproductive Toxicity**Reproductive and/or Developmental Effects**

| Name | Route | Value | Species | Test Result | Exposure Duration |
|--|-----------|----------------------------------|---------|-----------------------|----------------------|
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Ingestion | Not toxic to female reproduction | Mouse | NOAEL 1 mg/kg/day | 1 generation |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Ingestion | Not toxic to male reproduction | Mouse | NOAEL 1 mg/kg/day | 1 generation |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Ingestion | Not toxic to development | Mouse | NOAEL 1 mg/kg/day | 1 generation |
| SILANE TREATED SILICA | Ingestion | Not toxic to female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| SILANE TREATED SILICA | Ingestion | Not toxic to male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| SILANE TREATED SILICA | Ingestion | Not toxic to development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

For the component/components, either no data are currently available or the data are not sufficient for classification.

Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|--|------------|--------------------------------|--|---------|---------------------|-----------------------|
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Dermal | kidney and/or bladder | Some positive data exist, but the data are not sufficient for classification | Mouse | NOAEL 833 mg/kg/day | 78 weeks |
| TRIETHYLENE GLYCOL DIMETHACRYLATE (TEGDMA) | Dermal | blood | All data are negative | Mouse | NOAEL 833 mg/kg/day | 78 weeks |
| SILANE TREATED SILICA | Inhalation | respiratory system silicosis | All data are negative | Human | NOAEL Not available | occupational exposure |

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility.

EPA Hazardous Waste Number (RCRA): Not regulated

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

15.1. 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

15.2. State Regulations

Contact 3M for more information.

15.3. 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.

15.4. International Regulations

Contact 3M for more information.

This SDS 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 **Instability:** 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.

| | | | |
|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-9001-8 | Version Number: | 3.00 |
| Issue Date: | 03/24/15 | Supersedes Date: | 09/02/14 |

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|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-9002-6 | Version Number: | 2.00 |
| Issue Date: | 06/01/15 | Supersedes Date: | 07/28/11 |

SECTION 1: Identification

1.1. Product identifier

3M™ ESPE™ RelyX™ Ultimate Catalyst Paste

Product Identification Numbers

LE-F100-1018-9

1.2. Recommended use and restrictions on use

Recommended use

Dental Product, Adhesive resin cement.

Restrictions on use

For use only by dental professionals.

1.3. Supplier's details

| | |
|----------------------|---|
| 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) |

1.4. Emergency telephone number

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

SECTION 2: Hazard identification

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.

2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2A.

Skin Sensitizer: Category 1.

2.2. Label elements

Signal word

Warning

Symbols

Exclamation mark |

Pictograms**Hazard Statements**

Causes serious eye irritation.

May cause an allergic skin reaction.

Precautionary Statements**Prevention:**

Wear eye/face protection.

Wear protective gloves.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

Response:

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.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---|-------------|------------------------|
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material | None | 55 - 65 Trade Secret * |
| SUBSTITUTED DIMETHACRYLATE | 27689-12-9 | 20 - 30 Trade Secret * |
| 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1) | 945012-02-2 | 1 - 10 Trade Secret * |
| 1,12-DODECANE DIMETHYCRYLATE | 72829-09-5 | < 5 Trade Secret * |
| SODIUM P-TOLUENESULFINATE | 824-79-3 | < 5 Trade Secret * |
| SILANE TREATED SILICA | 68909-20-6 | < 5 Trade Secret * |
| CALCIUM HYDROXIDE | 1305-62-0 | < 2 Trade Secret * |
| 2-Propenoic acid, 2-methyl-, [(3-methoxypropyl)imino]di-2,1-ethanediyl ester | 93962-71-1 | < 2 Trade Secret * |

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide
Irritant Vapors or Gases

Condition

During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. 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. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

| Ingredient | C.A.S. No. | Agency | Limit type | Additional Comments |
|-------------------|------------|--------|---|---------------------|
| CALCIUM HYDROXIDE | 1305-62-0 | ACGIH | TWA:5 mg/m ³ | |
| CALCIUM HYDROXIDE | 1305-62-0 | OSHA | TWA(as total dust):15 mg/m ³ ;TWA(respirable fraction):5 mg/m ³ | |
| SILICA, AMORPHOUS | 68909-20-6 | OSHA | TWA concentration:0.8 mg/m ³ ;TWA:20 millions of particles/cu. ft. | |

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use in a well-ventilated area.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Safety Glasses with side shields

Skin/hand protection

See Section 7.1 for additional information on skin protection.

Respiratory protection

None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|---|
| General Physical Form: | Solid |
| Specific Physical Form: | Paste |
| Odor, Color, Grade: | tooth-colored pastes with slight acrylic odor |
| Odor threshold | <i>No Data Available</i> |
| pH | <i>Not Applicable</i> |
| Melting point | <i>No Data Available</i> |
| Boiling Point | <i>No Data Available</i> |
| Flash Point | No flash point |
| Evaporation rate | <i>No Data Available</i> |
| Flammability (solid, gas) | Not Classified |
| Flammable Limits(LEL) | <i>No Data Available</i> |
| Flammable Limits(UEL) | <i>No Data Available</i> |
| Vapor Pressure | <i>No Data Available</i> |
| Vapor Density | <i>No Data Available</i> |
| Density | 2 - 2.2 g/cm ³ |
| Specific Gravity | 2 - 2.2 [<i>Ref Std: WATER=1</i>] |
| Solubility in Water | Nil |
| Solubility- non-water | <i>No Data Available</i> |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i> |
| Autoignition temperature | <i>No Data Available</i> |
| Decomposition temperature | <i>No Data Available</i> |
| Viscosity | <i>No Data Available</i> |
| Volatile Organic Compounds | <i>No Data Available</i> |

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

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.

The information below represents toxicological information associated with the individual components of the uncured product. Once properly mixed and/or cured, the product is safe for its intended use.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

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

Skin Contact:

Mild 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.

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:

May be harmful if swallowed.

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

Additional Health Effects:

Carcinogenicity:

Exposures needed to cause the following health effect(s) are not expected during normal, intended use:

Contains a chemical or chemicals which can cause cancer.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

| Name | Route | Species | Value |
|---|-----------|------------------------|---|
| Overall product | Dermal | | No data available; calculated ATE > 5,000 mg/kg |
| Overall product | Ingestion | | No data available; calculated ATE 2,000 - 5,000 mg/kg |
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| SUBSTITUTED DIMETHACRYLATE | Dermal | Professional judgement | LD50 not applicable |

| | | | |
|--|--------------------------------|------------------------|--|
| SUBSTITUTED DIMETHACRYLATE | Ingestion | Rat | LD50 > 17,600 mg/kg |
| 1,12-DODECANE DIMETHACRYLATE | Dermal | Professional judgement | LD50 estimated to be 2,000 - 5,000 mg/kg |
| 1,12-DODECANE DIMETHACRYLATE | Ingestion | similar compounds | LD50 2000-5000 mg/kg |
| 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1) | Dermal | Professional judgement | LD50 estimated to be 2,000 - 5,000 mg/kg |
| 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1) | Ingestion | Rat | LD50 > 2,000 mg/kg |
| SILANE TREATED SILICA | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| SILANE TREATED SILICA | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| SILANE TREATED SILICA | Ingestion | Rat | LD50 > 5,110 mg/kg |
| CALCIUM HYDROXIDE | Dermal | Rabbit | LD50 > 2,500 mg/kg |
| CALCIUM HYDROXIDE | Ingestion | Rat | LD50 7,340 mg/kg |
| SODIUM P-TOLUENESULFINATE | Dermal | Professional judgement | LD50 estimated to be 2,000 - 5,000 mg/kg |
| SODIUM P-TOLUENESULFINATE | Ingestion | Rat | LD50 3,200 mg/kg |
| 2-Propenoic acid, 2-methyl-, [(3-methoxypropyl)imino]di-2,1-ethanediyl ester | Dermal | Professional judgement | LD50 Not applicable |
| 2-Propenoic acid, 2-methyl-, [(3-methoxypropyl)imino]di-2,1-ethanediyl ester | Ingestion | Rat | LD50 > 1,600 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|---|------------------------|---------------------------|
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material | Professional judgement | No significant irritation |
| SUBSTITUTED DIMETHACRYLATE | Rabbit | No significant irritation |
| SILANE TREATED SILICA | Rabbit | No significant irritation |
| CALCIUM HYDROXIDE | Human | Corrosive |

Serious Eye Damage/Irritation

| Name | Species | Value |
|---|------------------------|---------------------------|
| Glass powder (65997-17-3), surface modified with 2-propenoic acid, 2 methyl-.3-(trimethoxysilyl)propyl ester (2530-85-0), bulk material | Professional judgement | No significant irritation |
| SUBSTITUTED DIMETHACRYLATE | Rabbit | Mild irritant |
| SILANE TREATED SILICA | Rabbit | No significant irritation |
| CALCIUM HYDROXIDE | Rabbit | Corrosive |

Skin Sensitization

| Name | Species | Value |
|--|------------------|-----------------|
| SUBSTITUTED DIMETHACRYLATE | Guinea pig | Not sensitizing |
| 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1) | Mouse | Not sensitizing |
| SILANE TREATED SILICA | Human and animal | Not sensitizing |
| 2-Propenoic acid, 2-methyl-, [(3-methoxypropyl)imino]di-2,1-ethanediyl ester | Professional | Sensitizing |

| | | |
|--|----------------------|--|
| | nal judgeme nt | |
|--|----------------------|--|

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

| Name | Route | Value |
|--|----------|---------------|
| SUBSTITUTED DIMETHACRYLATE | In Vitro | Not mutagenic |
| 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1) | In Vitro | Not mutagenic |
| SILANE TREATED SILICA | In Vitro | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|-----------------------|---------------|---------|--|
| SILANE TREATED SILICA | Not Specified | Mouse | Some positive data exist, but the data are not sufficient for classification |

Reproductive Toxicity**Reproductive and/or Developmental Effects**

| Name | Route | Value | Species | Test Result | Exposure Duration |
|-----------------------|-----------|----------------------------------|---------|-----------------------|----------------------|
| SILANE TREATED SILICA | Ingestion | Not toxic to female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| SILANE TREATED SILICA | Ingestion | Not toxic to male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| SILANE TREATED SILICA | Ingestion | Not toxic to development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|--|------------|------------------------|--|---------|-------------------|-------------------|
| 2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-phenyl-1-(phenylmethyl)-, calcium salt (2:1) | Ingestion | nervous system | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 2,000 mg/kg | |
| CALCIUM HYDROXIDE | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human | LOAEL 2.5 mg/m3 | 20 minutes |

Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|-----------------------|------------|--------------------------------|-----------------------|---------|---------------------|-----------------------|
| SILANE TREATED SILICA | Inhalation | respiratory system silicosis | All data are negative | Human | NOAEL Not available | occupational exposure |

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility.

EPA Hazardous Waste Number (RCRA): Not regulated

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

15.1. 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

15.2. State Regulations

Contact 3M for more information.

15.3. 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.

15.4. International Regulations

Contact 3M for more information.

This SDS 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 **Instability:** 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.

| | | | |
|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-9002-6 | Version Number: | 2.00 |
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Safety Data Sheet

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|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-8287-4 | Version Number: | 3.00 |
| Issue Date: | 06/10/15 | Supersedes Date: | 05/29/15 |

SECTION 1: Identification

1.1. Product identifier

3M™ ESPE™ Scotchbond™ Universal

Product Identification Numbers

LE-F100-1014-6, LE-F100-1014-7, LE-F100-1014-9, 70-2011-3903-0

1.2. Recommended use and restrictions on use

Recommended use

Dental Product, Adhesive

Restrictions on use

For use only by dental professionals.

1.3. Supplier's details

| | |
|----------------------|---|
| 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) |

1.4. Emergency telephone number

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

SECTION 2: Hazard identification

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.

2.1. Hazard classification

Flammable Liquid: Category 3.

Serious Eye Damage/Irritation: Category 1.

Skin Sensitizer: Category 1B.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Corrosion | Exclamation mark |

Pictograms



Hazard Statements

Flammable liquid and vapor.

Causes serious eye damage.

May cause an allergic skin reaction.

Precautionary Statements

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Use explosion-proof electrical/ventilating/lighting equipment.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wear eye/face protection.

Contaminated work clothing must not be allowed out of the workplace.

Response:

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

If skin irritation or rash occurs: Get medical advice/attention.

Wash contaminated clothing before reuse.

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

Storage:

Store in a well-ventilated place. Keep cool.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|--|--------------|------------------------|
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | 1565-94-2 | 15 - 25 Trade Secret * |
| 2-HYDROXYETHYL METHACRYLATE | 868-77-9 | 15 - 25 Trade Secret * |
| DECAMETHYLENE DIMETHACRYLATE | 6701-13-9 | 5 - 15 Trade Secret * |
| SILANE TREATED SILICA | 122334-95-6 | 5 - 15 Trade Secret * |
| ETHANOL | 64-17-5 | 10 - 15 Trade Secret * |
| WATER | 7732-18-5 | 10 - 15 Trade Secret * |
| 2-PROPENOIC ACID, 2-METHYL-, REACTION | 1207736-18-2 | 1 - 10 Trade Secret * |

| | | |
|--|------------|----------------------|
| PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5) | | |
| COPOLYMER OF ACRYLIC AND ITACONIC ACID | 25948-33-8 | 1 - 5 Trade Secret * |
| DIMETHYLAMINO BENZOAT(-4) | 10287-53-3 | < 2 Trade Secret * |
| (DIMETHYLAMINO)ETHYL METHACRYLATE | 2867-47-2 | < 2 Trade Secret * |
| CAMPHORQUINONE | 10373-78-1 | < 2 Trade Secret * |
| METHYL ETHYL KETONE | 78-93-3 | < 0.5 Trade Secret * |

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance

Formaldehyde
Carbon monoxide
Carbon dioxide
Irritant Vapors or Gases
Oxides of Nitrogen

Condition

During Combustion
During Combustion
During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and

prevent explosive rupture.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. 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. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Contain spill. Cover spill area with a fire-extinguishing foam designed for use on solvents, such as alcohols and acetone, that can dissolve in water. An AR - AFFF type foam is recommended. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with detergent and water. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store away from heat. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

| Ingredient | C.A.S. No. | Agency | Limit type | Additional Comments |
|---------------------|------------|--------|--------------------------|------------------------------|
| ETHANOL | 64-17-5 | ACGIH | STEL:1000 ppm | A3: Confirmed animal carcin. |
| ETHANOL | 64-17-5 | OSHA | TWA:1900 mg/m3(1000 ppm) | |
| METHYL ETHYL KETONE | 78-93-3 | ACGIH | TWA:200 ppm;STEL:300 ppm | |
| METHYL ETHYL KETONE | 78-93-3 | OSHA | TWA:590 mg/m3(200 ppm) | |

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use in a well-ventilated area.

8.2.2. Personal protective equipment (PPE)**Eye/face protection**

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Safety Glasses with side shields

Skin/hand protection

See Section 7.1 for additional information on skin protection.

Respiratory protection

None required.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

| | |
|--|---|
| General Physical Form: | Liquid |
| Specific Physical Form: | Viscous Liquid |
| Odor, Color, Grade: | Characteristic odor, yellow liquid |
| Odor threshold | <i>No Data Available</i> |
| pH | <i>Not Applicable</i> |
| Melting point | <i>No Data Available</i> |
| Boiling Point | $\geq 78\text{ }^{\circ}\text{C}$ |
| Flash Point | 30.5 °C [<i>Test Method:</i> Closed Cup] |
| Evaporation rate | <i>No Data Available</i> |
| Flammability (solid, gas) | Not Applicable |
| Flammable Limits(LEL) | <i>No Data Available</i> |
| Flammable Limits(UEL) | <i>No Data Available</i> |
| Vapor Pressure | <i>No Data Available</i> |
| Vapor Density | <i>No Data Available</i> |
| Density | 1 - 1.2 g/cm ³ |
| Specific Gravity | 1 - 1.2 [<i>Ref Std:</i> WATER=1] |
| Solubility in Water | Appreciable |
| Solubility- non-water | <i>No Data Available</i> |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i> |
| Autoignition temperature | <i>No Data Available</i> |
| Decomposition temperature | <i>No Data Available</i> |
| Viscosity | <i>Not Applicable</i> |
| Volatile Organic Compounds | <i>No Data Available</i> |

SECTION 10: Stability and reactivity**10.1. Reactivity**

This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

| <u>Substance</u> | <u>Condition</u> |
|------------------|------------------|
| None known. | |

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

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.

The information below represents toxicological information associated with the individual components of the uncured product. Once properly mixed and/or cured, the product is safe for its intended use.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

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

Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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.

Ingestion:

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

Additional Information:

This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified by the International Agency for Research on Cancer as carcinogenic to humans. There are also data associating human consumption of alcoholic beverages with developmental toxicity and liver toxicity. Exposure to ethanol during the foreseeable use of this

product is not expected to cause cancer, developmental toxicity, or liver toxicity.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

| Name | Route | Species | Value |
|--|--------------------------------|-----------------------|---|
| Overall product | Dermal | | No data available; calculated ATE > 5,000 mg/kg |
| Overall product | Ingestion | | No data available; calculated ATE > 5,000 mg/kg |
| 2-HYDROXYETHYL METHACRYLATE | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| 2-HYDROXYETHYL METHACRYLATE | Ingestion | Rat | LD50 5,564 mg/kg |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Dermal | Professional judgment | LD50 estimated to be 2,000 - 5,000 mg/kg |
| ETHANOL | Dermal | Rabbit | LD50 > 15,800 mg/kg |
| ETHANOL | Inhalation-Vapor (4 hours) | Rat | LC50 124.7 mg/l |
| ETHANOL | Ingestion | Rat | LD50 17,800 mg/kg |
| DECAMETHYLENE DIMETHACRYLATE | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |
| DECAMETHYLENE DIMETHACRYLATE | Dermal | Professional judgment | LD50 estimated to be 2,000 - 5,000 mg/kg |
| SILANE TREATED SILICA | Dermal | Professional judgment | LD50 estimated to be 2,000 - 5,000 mg/kg |
| SILANE TREATED SILICA | Ingestion | similar compounds | LD50 estimated to be 2,000 - 5,000 mg/kg |
| 2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5) | Dermal | Professional judgment | LD50 estimated to be > 5,000 mg/kg |
| 2-PROPENOIC ACID, 2-METHYL-, REACTION PRODUCTS WITH 1,10-DECANEDIOL AND PHOSPHOROUS OXIDE (P2O5) | Ingestion | Rat | LD50 > 1,380 mg/kg |
| COPOLYMER OF ACRYLIC AND ITACONIC ACID | Dermal | Professional judgment | LD50 estimated to be > 5,000 mg/kg |
| COPOLYMER OF ACRYLIC AND ITACONIC ACID | Ingestion | Rat | LD50 > 5,000 mg/kg |
| CAMPHORQUINONE | Dermal | Professional judgment | LD50 estimated to be 2,000 - 5,000 mg/kg |
| CAMPHORQUINONE | Ingestion | Rat | LD50 > 2,000 mg/kg |
| DIMETHYLAMINO BENZOATE(-4) | Dermal | Rat | LD50 > 2,000 mg/kg |
| DIMETHYLAMINO BENZOATE(-4) | Ingestion | Rat | LD50 > 2,000 mg/kg |
| (DIMETHYLAMINO)ETHYL METHACRYLATE | Dermal | Rat | LD50 > 2,000 mg/kg |
| (DIMETHYLAMINO)ETHYL METHACRYLATE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.436 mg/l |
| (DIMETHYLAMINO)ETHYL METHACRYLATE | Ingestion | Rat | LD50 > 2,000 mg/kg |
| METHYL ETHYL KETONE | Dermal | Rabbit | LD50 > 8,050 mg/kg |
| METHYL ETHYL KETONE | Inhalation-Vapor (4 hours) | Rat | LC50 34.5 mg/l |
| METHYL ETHYL KETONE | Ingestion | Rat | LD50 2,737 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|--|-----------------------|---------------------------|
| Overall product | Rabbit | No significant irritation |
| 2-HYDROXYETHYL METHACRYLATE | Rabbit | Minimal irritation |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Not available | Minimal irritation |
| ETHANOL | Rabbit | No significant irritation |
| DECAMETHYLENE DIMETHACRYLATE | Professional judgment | Irritant |
| DIMETHYLAMINO BENZOATE(-4) | Rabbit | No significant irritation |
| METHYL ETHYL KETONE | Rabbit | Minimal irritation |

Serious Eye Damage/Irritation

| Name | Species | Value |
|--|-----------------------|-------------------|
| Overall product | In vitro data | Corrosive |
| 2-HYDROXYETHYL METHACRYLATE | Rabbit | Moderate irritant |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Not available | Moderate irritant |
| ETHANOL | Rabbit | Moderate irritant |
| DECAMETHYLENE DIMETHACRYLATE | Professional judgment | Severe irritant |
| DIMETHYLAMINO BENZOATE(-4) | Rabbit | Mild irritant |
| METHYL ETHYL KETONE | Rabbit | Severe irritant |

Skin Sensitization

| Name | Species | Value |
|--|------------------|--|
| 2-HYDROXYETHYL METHACRYLATE | Human and animal | Sensitizing |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Guinea pig | Sensitizing |
| ETHANOL | Human | Some positive data exist, but the data are not sufficient for classification |
| DECAMETHYLENE DIMETHACRYLATE | | Sensitizing |

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

| Name | Route | Value |
|--|----------|--|
| 2-HYDROXYETHYL METHACRYLATE | In vivo | Not mutagenic |
| 2-HYDROXYETHYL METHACRYLATE | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| ETHANOL | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| ETHANOL | In vivo | Some positive data exist, but the data are not sufficient for classification |
| METHYL ETHYL KETONE | In Vitro | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|---------------------|------------|-------------------------|--|
| ETHANOL | Ingestion | Multiple animal species | Some positive data exist, but the data are not sufficient for classification |
| METHYL ETHYL KETONE | Inhalation | Human | Not carcinogenic |

Reproductive Toxicity

Reproductive and/or Developmental Effects

| Name | Route | Value | Species | Test Result | Exposure Duration |
|--|------------|--|---------|-----------------------|------------------------------|
| 2-HYDROXYETHYL METHACRYLATE | Ingestion | Not toxic to female reproduction | Rat | NOAEL 1,000 mg/kg/day | premating & during gestation |
| 2-HYDROXYETHYL METHACRYLATE | Ingestion | Not toxic to male reproduction | Rat | NOAEL 1,000 mg/kg/day | 49 days |
| 2-HYDROXYETHYL METHACRYLATE | Ingestion | Not toxic to development | Rat | NOAEL 1,000 mg/kg/day | premating & during gestation |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Ingestion | Not toxic to female reproduction | Mouse | NOAEL 0.8 mg/kg/day | premating & during gestation |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Ingestion | Not toxic to male reproduction | Mouse | NOAEL 0.8 mg/kg/day | premating & during gestation |
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Ingestion | Not toxic to development | Mouse | NOAEL 0.8 mg/kg/day | premating & during gestation |
| ETHANOL | Inhalation | Not toxic to development | Rat | NOAEL 38 mg/l | during gestation |
| ETHANOL | Ingestion | Some positive developmental data exist, but the data are not sufficient for classification | Rat | NOAEL 5,200 mg/kg/day | premating & during gestation |
| METHYL ETHYL KETONE | Inhalation | Not toxic to female reproduction | Rat | NOAEL 14.7 mg/l | 90 days |
| METHYL ETHYL KETONE | Inhalation | Not toxic to male reproduction | Rat | NOAEL 14.7 mg/l | 90 days |
| METHYL ETHYL KETONE | Inhalation | Some positive developmental data exist, but the data are not sufficient for classification | Rat | LOAEL 8.8 mg/l | during gestation |

Target Organ(s)

Specific Target Organ Toxicity - single exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|--|------------|-----------------------------------|--|-------------------------|---------------------|-------------------|
| ETHANOL | Inhalation | central nervous system depression | May cause drowsiness or dizziness | Human | LOAEL 2.6 mg/l | 30 minutes |
| ETHANOL | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human | LOAEL 9.4 mg/l | not available |
| ETHANOL | Ingestion | central nervous system depression | May cause drowsiness or dizziness | Multiple animal species | NOAEL not available | |
| ETHANOL | Ingestion | kidney and/or bladder | Some positive data exist, but the data are not sufficient for classification | Dog | NOAEL 3,000 mg/kg | |
| DECAMETHYLENE DIMETHACRYLATE | Inhalation | respiratory irritation | May cause respiratory irritation | | NOAEL Not available | |
| COPOLYMER OF ACRYLIC AND ITACONIC ACID | Ingestion | nervous system | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 5,000 mg/kg | |
| METHYL ETHYL KETONE | Inhalation | central nervous system depression | May cause drowsiness or dizziness | official classification | NOAEL Not available | |
| METHYL ETHYL KETONE | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available | |
| METHYL ETHYL KETONE | Ingestion | liver | Some positive data exist, but the data are not sufficient for | Rat | NOAEL Not available | not applicable |

| | | | classification | | | |
|---------------------|-----------|-----------------------|--|-----|-------------------|----------------|
| METHYL ETHYL KETONE | Ingestion | kidney and/or bladder | Some positive data exist, but the data are not sufficient for classification | Rat | LOAEL 1,080 mg/kg | not applicable |

Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|--|------------|---|--|------------|-----------------------|------------------------------|
| BISPHENOL A DIGLYCIDYL ETHER DIMETHACRYLATE (BISGMA) | Ingestion | endocrine system liver nervous system kidney and/or bladder | All data are negative | Mouse | NOAEL 0.8 mg/kg/day | premating & during gestation |
| ETHANOL | Inhalation | liver | Some positive data exist, but the data are not sufficient for classification | Rabbit | LOAEL 124 mg/l | 365 days |
| ETHANOL | Inhalation | hematopoietic system immune system | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 25 mg/l | 14 days |
| ETHANOL | Ingestion | liver | Some positive data exist, but the data are not sufficient for classification | Rat | LOAEL 8,000 mg/kg/day | 4 months |
| ETHANOL | Ingestion | kidney and/or bladder | Some positive data exist, but the data are not sufficient for classification | Dog | NOAEL 3,000 mg/kg/day | 7 days |
| METHYL ETHYL KETONE | Dermal | nervous system | All data are negative | Guinea pig | NOAEL Not available | 31 weeks |
| METHYL ETHYL KETONE | Inhalation | liver kidney and/or bladder | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 14.7 mg/l | 90 days |
| METHYL ETHYL KETONE | Inhalation | heart endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system muscles | All data are negative | Rat | NOAEL 14.7 mg/l | 90 days |
| METHYL ETHYL KETONE | Ingestion | liver | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL Not available | 7 days |
| METHYL ETHYL KETONE | Ingestion | nervous system | All data are negative | Rat | NOAEL 173 mg/kg/day | 90 days |

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. If no other disposal options are available, waste product that has been completely cured or polymerized may be placed in a landfill properly designed for industrial waste.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable), D035 (Methyl ethyl ketone)

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

15.1. 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 - Yes

15.2. State Regulations

Contact 3M for more information.

15.3. 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.

15.4. International Regulations

Contact 3M for more information.

This SDS 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:** 3 **Instability:** 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.

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Version Number: 3.00
Supersedes Date: 05/29/15

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Safety Data Sheet

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|------------------------|-----------|-------------------------|----------|
| Document Group: | 29-8286-6 | Version Number: | 2.00 |
| Issue Date: | 02/11/15 | Supersedes Date: | 06/06/12 |

SECTION 1: Identification

1.1. Product identifier

3M™ ESPE™ Scotchbond™ Universal Etchant

Product Identification Numbers

LE-F100-1014-5, LE-F100-1040-4, 70-2011-3906-3, 70-2011-4006-1, 70-2011-4007-9

1.2. Recommended use and restrictions on use

Recommended use

Dental Product, Etching gel

Restrictions on use

For use only by dental professionals

1.3. Supplier's details

| | |
|----------------------|---|
| 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) |

1.4. Emergency telephone number

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

SECTION 2: Hazard identification

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.

2.1. Hazard classification

Corrosive to metal: Category 1.

Serious Eye Damage/Irritation: Category 1.

Skin Corrosion/Irritation: Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Corrosion |

Pictograms**Hazard Statements**

May be corrosive to metals.

Causes serious eye damage.

Causes severe skin burns and eye damage.

Precautionary Statements**Prevention:**

Keep only in original container.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear protective gloves, protective clothing, and eye/face protection.

Wash thoroughly after handling.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

Wash contaminated clothing before reuse.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Absorb spillage to prevent material damage.

Storage:

Store in a corrosive resistant container with a resistant inner liner.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

May cause chemical gastrointestinal burns.

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|--|-------------------|------------------------|
| WATER | 7732-18-5 | 50 - 65 Trade Secret * |
| PHOSPHORIC ACID | 7664-38-2 | 30 - 40 Trade Secret * |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | 112945-52-5 | 5 - 10 Trade Secret * |
| POLYETHYLENE GLYCOL | 25322-68-3 | 1 - 5 Trade Secret * |
| ALUMINUM OXIDE | 1344-28-1 | < 2 Trade Secret * |

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

Eye Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Contain spill. Collect as much of the spilled material as possible. 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. Clean up residue with water. Cover, but do not seal for 48 hours. Dispose of collected material

as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid prolonged or repeated skin contact. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Wash contaminated clothing before reuse. Do not get in eyes.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat. Keep only in original container. Store in a corrosive resistant container with a resistant inner liner. Store away from strong bases.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

| Ingredient | C.A.S. No. | Agency | Limit type | Additional Comments |
|---------------------|------------|--------|--|---------------------|
| ALUMINUM OXIDE | 1344-28-1 | CMRG | TWA:1 fiber/cc | |
| ALUMINUM OXIDE | 1344-28-1 | OSHA | TWA(as total dust):15 mg/m3;TWA(respirable fraction):5 mg/m3 | |
| POLYETHYLENE GLYCOL | 25322-68-3 | AIHA | TWA(as particulate):10 mg/m3 | |
| PHOSPHORIC ACID | 7664-38-2 | ACGIH | TWA:1 mg/m3;STEL:3 mg/m3 | |
| PHOSPHORIC ACID | 7664-38-2 | OSHA | TWA:1 mg/m3 | |

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use in a well-ventilated area.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Safety Glasses with side shields

Skin/hand protection

See Section 7.1 for additional information on skin protection.

Respiratory protection

None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|------------------------------------|
| General Physical Form: | Liquid |
| Specific Physical Form: | Gel |
| Odor, Color, Grade: | Slight characteristic odor, Blue |
| Odor threshold | <i>No Data Available</i> |
| pH | < 1 |
| Melting point | <i>Not Applicable</i> |
| Boiling Point | <i>No Data Available</i> |
| Flash Point | > 100 °C [Test Method: Closed Cup] |
| Evaporation rate | <i>No Data Available</i> |
| Flammability (solid, gas) | Not Applicable |
| Flammable Limits(LEL) | <i>No Data Available</i> |
| Flammable Limits(UEL) | <i>No Data Available</i> |
| Vapor Pressure | <i>No Data Available</i> |
| Vapor Density | <i>No Data Available</i> |
| Density | 1.1 g/ml - 1.2 g/ml |
| Specific Gravity | 1.1 - 1.2 [Ref Std: WATER=1] |
| Solubility in Water | Complete |
| Solubility- non-water | <i>No Data Available</i> |
| Partition coefficient: n-octanol/ water | <i>No Data Available</i> |
| Autoignition temperature | <i>No Data Available</i> |
| Decomposition temperature | <i>No Data Available</i> |
| Viscosity | <i>No Data Available</i> |
| Volatile Organic Compounds | <i>No Data Available</i> |
| Percent volatile | <i>No Data Available</i> |
| VOC Less H2O & Exempt Solvents | <i>No Data Available</i> |

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Strong bases

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

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. The information below represents toxicological information associated with the individual components of the uncured product. Once properly mixed and/or cured, the product is safe for its intended use.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

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

Skin Contact:

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

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.

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.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

| Name | Route | Species | Value |
|---|--------------------------------|---------|---|
| Overall product | Dermal | | No data available; calculated ATE > 5,000 mg/kg |
| Overall product | Ingestion | | No data available; calculated ATE 2,000 - 5,000 mg/kg |
| PHOSPHORIC ACID | Dermal | Rabbit | LD50 2,740 mg/kg |
| PHOSPHORIC ACID | Ingestion | Rat | LD50 1,530 mg/kg |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 0.691 mg/l |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Ingestion | Rat | LD50 > 5,110 mg/kg |
| POLYETHYLENE GLYCOL | Dermal | Rabbit | LD50 > 20,000 mg/kg |
| POLYETHYLENE GLYCOL | Ingestion | Rat | LD50 32,770 mg/kg |
| ALUMINUM OXIDE | Dermal | | LD50 estimated to be > 5,000 mg/kg |

| | | | |
|----------------|--------------------------------|-----|--------------------|
| ALUMINUM OXIDE | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 2.3 mg/l |
| ALUMINUM OXIDE | Ingestion | Rat | LD50 > 5,000 mg/kg |

ATE = acute toxicity estimate

Skin Corrosion/Irritation

| Name | Species | Value |
|---|---------|---------------------------|
| PHOSPHORIC ACID | Rabbit | Corrosive |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Rabbit | No significant irritation |
| POLYETHYLENE GLYCOL | Rabbit | Minimal irritation |
| ALUMINUM OXIDE | Rabbit | No significant irritation |

Serious Eye Damage/Irritation

| Name | Species | Value |
|---|-------------------------|---------------------------|
| PHOSPHORIC ACID | official classification | Corrosive |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Rabbit | No significant irritation |
| POLYETHYLENE GLYCOL | Rabbit | Mild irritant |
| ALUMINUM OXIDE | Rabbit | No significant irritation |

Skin Sensitization

| Name | Species | Value |
|---|------------------|-----------------|
| PHOSPHORIC ACID | Human | Not sensitizing |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Human and animal | Not sensitizing |
| POLYETHYLENE GLYCOL | Guinea pig | Not sensitizing |

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

| Name | Route | Value |
|---|----------|---------------|
| PHOSPHORIC ACID | In Vitro | Not mutagenic |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | In Vitro | Not mutagenic |
| POLYETHYLENE GLYCOL | In Vitro | Not mutagenic |
| POLYETHYLENE GLYCOL | In vivo | Not mutagenic |
| ALUMINUM OXIDE | In Vitro | Not mutagenic |

Carcinogenicity

| Name | Route | Species | Value |
|---|---------------|---------|--|
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Not Specified | Mouse | Some positive data exist, but the data are not sufficient for classification |
| POLYETHYLENE GLYCOL | Ingestion | Rat | Not carcinogenic |
| ALUMINUM OXIDE | Inhalation | Rat | Not carcinogenic |

Reproductive Toxicity

Reproductive and/or Developmental Effects

| Name | Route | Value | Species | Test Result | Exposure Duration |
|-----------------|-----------|----------------------------------|---------|---------------------|-------------------|
| PHOSPHORIC ACID | Ingestion | Not toxic to female reproduction | Rat | NOAEL 750 mg/kg/day | 2 generation |
| PHOSPHORIC ACID | Ingestion | Not toxic to male reproduction | Rat | NOAEL 750 mg/kg/day | 2 generation |
| PHOSPHORIC ACID | Ingestion | Not toxic to development | Rat | NOAEL 750 mg/kg/day | 2 generation |

| | | | | | |
|---|---------------|---|-------|-------------------------------|----------------------|
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Ingestion | Not toxic to female reproduction | Rat | NOAEL 509 mg/kg/day | 1 generation |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Ingestion | Not toxic to male reproduction | Rat | NOAEL 497 mg/kg/day | 1 generation |
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Ingestion | Not toxic to development | Rat | NOAEL 1,350 mg/kg/day | during organogenesis |
| POLYETHYLENE GLYCOL | Ingestion | Not toxic to female reproduction | Rat | NOAEL 1,125 mg/kg/day | during gestation |
| POLYETHYLENE GLYCOL | Ingestion | Not toxic to male reproduction | Rat | NOAEL 5699 +/- 1341 mg/kg/day | 5 days |
| POLYETHYLENE GLYCOL | Not Specified | Some positive reproductive/developmental data exist, but the data are not sufficient for classification | | NOEL N/A | |
| POLYETHYLENE GLYCOL | Ingestion | Some positive developmental data exist, but the data are not sufficient for classification | Mouse | NOAEL 562 mg/animal/day | during gestation |

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---------------------|------------|------------------------|--|---------|---------------------|-----------------------|
| PHOSPHORIC ACID | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available | occupational exposure |
| POLYETHYLENE GLYCOL | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 1.008 mg/l | 2 weeks |

Specific Target Organ Toxicity - repeated exposure

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|------------|--|--|---------|-----------------------|-----------------------|
| SYNTHETIC AMORPHOUS SILICA, FUMED, CRYSTALLINE FREE | Inhalation | respiratory system silicosis | All data are negative | Human | NOAEL Not available | occupational exposure |
| POLYETHYLENE GLYCOL | Inhalation | respiratory system | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 1.008 mg/l | 2 weeks |
| POLYETHYLENE GLYCOL | Ingestion | kidney and/or bladder | Some positive data exist, but the data are not sufficient for classification | Rat | NOAEL 5,640 mg/kg/day | 13 weeks |
| POLYETHYLENE GLYCOL | Ingestion | heart endocrine system hematopoietic system liver nervous system | All data are negative | Rat | NOAEL 5,640 mg/kg/day | 13 weeks |
| ALUMINUM OXIDE | Inhalation | pneumoconiosis pulmonary fibrosis | Some positive data exist, but the data are not sufficient for classification | Human | NOAEL Not available | occupational exposure |

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information**Ecotoxicological information**

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility.

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

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

15.1. 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

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

| <u>Ingredient</u> | <u>C.A.S. No</u> | <u>% by Wt</u> |
|--------------------------|-------------------------|-----------------------|
| ALUMINUM OXIDE | 1344-28-1 | < 2 |

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the new substance notification requirements of CEPA.

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.

15.4. International Regulations

Contact 3M for more information.

This SDS 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: 1 Instability: 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.

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