

SAFETY DATA SHEETS

This SDS packet was issued with item:

074290896

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

074261004 074265500 074290565 074290904 074299756 074299764

SAFETY DATA SHEET

Section 1. Product And Company Identification

Product Name: Gel Etchant

Product Use: Etching gel

Manufacturer: Kerr Corporation
1717 W. Collins Ave.
Orange, CA 92867-5422
U.S.A.

Information Phone Number: 1-800-841-1428 (Customer Service)

Chemical Emergency Phone Number (Chemical Spills, Leaks, Fire, Exposure or Accident only):
CHEMTREC 1-800-424-9300 (in the US) 1-703-527-3887 (Outside the US)

SDS Date of Preparation/Revision: December 27, 2018

Section 2. Hazards Identification

GHS Classification:

Skin Corrosion Category 1A

Eye Damage Category 1

Label Elements:

Danger!



Hazard Phrases

Causes severe skin burns and eye damage.

Precautionary Phrases:

Wash thoroughly after handling.

Wear protective gloves, eye protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rise 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.

Dispose of contents and container in accordance with local and national regulations.

Section 3. Composition/Information on Ingredients

| Component | CAS No. | Amount |
|----------------------------|-----------|--------|
| Phosphoric acid | 7664-38-2 | 35-40% |
| Cobalt alumina blue spinel | 1345-16-0 | < 1% |

Section 4. First Aid Measures

Inhalation: Immediately remove victim to fresh air. If breathing is difficult, oxygen should be administered by qualified personnel. If breathing has stopped, administer artificial respiration. Get immediate medical attention.

Skin Contact: Flush thoroughly with water. Get medical attention if irritation or symptoms of exposure develop. Remove and launder contaminated clothing before re-use.

Eye Contact: Rinse thoroughly with water. Get medical attention if irritation occurs and persists.

Ingestion: Do NOT induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. Keep the victim calm and warm. Get immediate medical attention.

Most important symptoms and effects, acute and delayed: Causes severe skin burns and eye damage.

Indication of immediate medical attention and special treatment, if needed: No immediate medical attention is required.

Section 5. Fire Fighting Measures

Suitable (and Unsuitable) Extinguishing Media: Use any media appropriate for the surrounding fire. Cool fire exposed containers with water.

Specific Hazards Arising from the Chemical: Combustion may produce carbon dioxide, carbon monoxide, phosphorus oxides, metal oxide, hydrogen.

Special Protective Equipment and Precautions for Fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored. Cool fire-exposed containers with water. Contain water used in firefighting from entering sewers or natural waterways.

Section 6: Accidental Release Measures

Personal precautions, Protective equipment, and Emergency procedures: Evacuate spill area and keep unprotected personnel away. Avoid contact with eyes, skin and clothing. Wear appropriate protective clothing and equipment.

Environmental Precautions: Avoid releases to the environment. Report spill as required by local and federal regulations.

Methods and Materials for Containment and Cleaning up: Prompt cleanup and removal are necessary. Soak up spills with inert solids and place in container for disposal according to local regulations.

Section 7. Handling and Storage

Precautions for Safe Handling: Prevent contact with eyes, skin and clothing. Always wear impervious

gloves, chemical safety goggles and protective clothing when handling this material. Wash thoroughly with soap and water after handling. Do not eat, drink or smoke in the work area. Remove and wash contaminated clothing before reuse.

Empty containers retain product residues which can be hazardous. Follow all SDS precautions when handling empty containers.

Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry, well-ventilated area away from direct sunlight. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers.

Section 8. Exposure Controls / Personal Protection

Exposure Limits

| Chemical | Exposure Limit |
|----------------------------|--|
| Phosphoric acid | 1 mg/m ³ TWA ACGIH TLV 3 mg/m ³ STEL OSHA PEL |
| Cobalt alumina blue spinel | 0.02 mg/m ³ TWA ACGIH |

Appropriate Engineering Controls: Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

Respiratory Protection: None under normal use conditions with adequate ventilation. For operations where the occupational exposure limits are exceeded, an approved respirator with particulate cartridges is recommended. Equipment selection depends on contaminant type and concentration. Select in accordance with applicable regulations and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Hand protection: Impervious gloves are suggested to prevent skin contact. Contact your glove supplier for selection assistance.

Eye Protection: Chemical safety goggles are recommended if contact is possible.

Skin Protection: Wear protective clothing as needed to avoid skin contact and contamination of personal clothing.

Hygiene measures: Suitable eye and skin washing facilities should be available in the work area.

Section 9. Physical and Chemical Properties

| | | | |
|-----------------------------------|----------------|-----------------------------|--|
| Appearance: | Blue gel | Odor: | Odorless |
| Odor Threshold: | Not available | pH: | 0.5 – 1.5 |
| Melting/Freezing Point: | Not available | Boiling Point/Range: | 100°C |
| Flash Point: | Not flammable | Evaporation Rate: | Not available |
| Flammability: (Solid, Gas) | Not applicable | Flammability Limits: | LEL: Not applicable UEL: Not applicable |

| | | | |
|-----------------------------------|---------------|----------------------------------|------------------|
| Vapor Pressure: | 760 mmHg | Vapor Density: | Not available |
| Relative Density: | 1.2 | Solubilities: | Soluble in water |
| Partition Coefficient: | Not available | Autoignition Temperature: | Not available |
| (N-Octanol/Water) | | Viscosity: | Not available |
| Decomposition Temperature: | Not available | | |

Section 10. Stability and Reactivity

Reactivity: The product is not expected to be reactive.

Chemical Stability: Stable under normal storage and handling conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to avoid: Avoid extremely high or low temperatures.

Incompatible Materials: Oxidizing materials, reducing materials, metals, acids, alkalis, moisture, peroxides, amines.

Hazardous decomposition products: None if stored normally.

Section 11. Toxicological Information

Potential Health Effects:

Inhalation: May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.

Skin Contact: Causes severe skin burns.

Eye Contact: Causes serious eye damage.

Ingestion: Corrosive to the digestive tract. Causes burns. May cause burns to mouth, throat and stomach.

Chronic Hazards: None expected.

Skin Sensitization: No adverse effects expected. Components are not sensitizers.

Respiratory Sensitization: No data available. This product is not expected to cause respiratory sensitization.

Germ Cell Mutagenicity: None of the components are mutagenic.

Carcinogen:

Cobalt alumina blue spinel is listed as "Possibly Carcinogenic to Humans" (Group 2B) by IARC. None of the other components are listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

Developmental / Reproductive Toxicity: None of the components have been shown to cause reproductive or developmental toxicity.

Specific Target Organ Toxicity (Single Exposure): No data available.

Specific Target Organ Toxicity (Repeated Exposure): No data available.

Aspiration Toxicity: Not an aspiration hazard.

Acute Toxicity Values:

Product ATE: 3198.8 mg/kg mg/L (Oral); 7198.8 mg/kg (Dermal)
 Phosphoric acid: Dermal rat LD50: 2740 mg/kg; Oral rat LD50: 1.25 g/kg
 Cobalt aluminate blue spinel: Oral rat LD50: >5000 mg/kg

Section 12. Ecological Information

Toxicity:

Phosphoric acid: 96 hr LC50 *Lepomis macrochirus* 60 ppm; 48 hr EC50 *Daphnia magna* 105 ppm.

Persistence and degradability: Biodegradation is not applicable to inorganic substances.

Bioaccumulative Potential: No data available.

Mobility in Soil: Slightly soluble.

Other Adverse Effects: No data available.

Section 13. Disposal Considerations

Disposal: For unused product, dispose of in accordance with Federal and local regulations.

Container Disposal: Dispose of empty container in accordance with Federal and local regulations.

Section 14. Transport Information

| | UN Number | UN Proper Shipping Name | Hazard Class(s) | Packing Group | Environmental Hazards |
|------------|-----------|--------------------------|-----------------|---------------|-----------------------|
| US DOT | UN1805 | Phosphoric acid solution | 8 | III | None |
| EU ADR/RID | UN1805 | Phosphoric acid solution | 8 | III | None |
| IMDG | UN1805 | Phosphoric acid solution | 8 | III | None |
| IATA/ICAO | UN1805 | Phosphoric acid solution | 8 | III | None |

Special Precautions for User: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in Bulk According to Annex II MARPOL 73/78 and the IBC Code: Not applicable – product is transported only in packaged form.

Section 15. Regulatory Information

U.S. Federal Regulations:

EPA SARA 311/312 Hazard Classification: Refer to Section 2 for OSHA Hazard Classification.

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

Protection Of Stratospheric Ozone: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: This product is not subject to CERCLA reporting requirements; however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

International Inventories

US EPA TSCA Inventory: All of the components of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or exempt.

Canada CEPA: All of the components of this material are listed on the DSL or exempt.

| |
|--------------------------------------|
| Section 16. Other Information |
|--------------------------------------|

Effective Date: December 27, 2018

Supersedes Date: December 12, 2014

Revision Summary: All Sections – New SDS format

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date of preparation, however, KERR Corporation makes no warranty with respect to the accuracy or suitability of the recommendations, and assumes no liability to any use thereof.

Silane Primer

1. Product and company identification

| | |
|-----------------------------|---|
| Product name | : Silane Primer |
| Material uses | : Dental product: Dental Restoration |
| Manufacturer | : Kerr Corporation 1717 West Collins Avenue Orange, CA 92867-5422 Telephone no.: 1-800-KERR-123 |
| Prepared by | : IHS |
| In case of emergency | : CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887 |

2. Hazards identification

| | |
|---|--|
| Physical state | : Liquid. [Clear.] |
| Color | : Colorless. |
| Odor | : Alcohol-like. |
| Emergency overview | |
| Signal word | : DANGER! |
| Hazard statements | : FLAMMABLE LIQUID AND VAPOR. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. |
| Precautions | : Health effects are based on the uncured material. Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling. Keep container tightly closed. |
| Routes of entry | : Dermal contact. Eye contact. Inhalation. Ingestion. |
| Potential acute health effects | |
| Inhalation | : Can cause central nervous system (CNS) depression. Irritating to respiratory system. |
| Ingestion | : Can cause central nervous system (CNS) depression. |
| Skin | : Irritating to skin. May cause sensitization by skin contact. |
| Eyes | : Severely irritating to eyes. Risk of serious damage to eyes. |
| Potential chronic health effects | |
| Chronic effects | : Contains material that may cause target organ damage, based on animal data. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. |
| Carcinogenicity | : No known significant effects or critical hazards. |
| Mutagenicity | : No known significant effects or critical hazards. |
| Teratogenicity | : No known significant effects or critical hazards. |
| Developmental effects | : No known significant effects or critical hazards. |
| Fertility effects | : No known significant effects or critical hazards. |

2. Hazards identification

Target organs : Contains material which may cause damage to the following organs: blood, the reproductive system, liver, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
respiratory tract irritation
coughing
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion : No specific data.

Skin : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by over-exposure : Pre-existing skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

3. Composition/information on ingredients

| Name | CAS number | % |
|---|------------|--------|
| ethanol | 64-17-5 | 60-100 |
| Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-2,2'-ethylenedioxydiethyl dimethacrylate | 41637-38-1 | 1-5 |
| 3-trimethoxysilylpropyl methacrylate | 109-16-0 | 1-5 |
| | 2530-85-0 | 1-5 |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact : No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.

Skin contact : No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.

Inhalation : No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe.

4. First aid measures

Protection of first-aiders : In case of major fire and large quantities: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Antidote information

| Product/ingredient name | Antidote information |
|-------------------------------|----------------------|
| No antidote information known | |

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product : Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable : Use dry chemical, CO₂, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : In case of major fire and large quantities: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions : Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely

Environmental precautions : Low release. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Large spill : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

7. Handling and storage

Handling : No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose in a safe manner.

7. Handling and storage

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

| <u>Occupational exposure limits</u> | | <u>TWA (8 hours)</u> | | | <u>STEL (15 mins)</u> | | | <u>Ceiling</u> | | | |
|-------------------------------------|------------------|----------------------|-------------------------|--------------|-----------------------|-------------------------|--------------|----------------|-------------------------|--------------|------------------|
| <u>Ingredient</u> | <u>List name</u> | <u>ppm</u> | <u>mg/m³</u> | <u>Other</u> | <u>ppm</u> | <u>mg/m³</u> | <u>Other</u> | <u>ppm</u> | <u>mg/m³</u> | <u>Other</u> | <u>Notations</u> |
| ethanol | US ACGIH 4/2014 | - | - | - | 1000 | - | - | - | - | - | |
| | AB 4/2009 | 1000 | 1880 | - | - | - | - | - | - | - | |
| | BC 7/2013 | - | - | - | 1000 | - | - | - | - | - | |
| | ON 1/2013 | - | - | - | 1000 | - | - | - | - | - | |
| | QC 1/2014 | 1000 | 1880 | - | - | - | - | - | - | - | |

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures : No special measures are required for small quantities under normal and intended conditions of product use.

Hygiene measures : No special measures are required for small quantities under normal and intended conditions of product use.

Personal protection

Respiratory : No special measures are required for small quantities under normal and intended conditions of product use.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin : No special measures are required for small quantities under normal and intended conditions of product use.

Environmental exposure controls : No special measures are required for small quantities under normal and intended conditions of product use.

9. Physical and chemical properties

| | |
|-----------------------------------|---|
| Physical state | : Liquid. [Clear.] |
| Flash point | : Closed cup: 13°C (55.4°F) |
| Auto-ignition temperature | : Not available. |
| Flammable limits | : Lower: 4.3% Upper: 19% |
| Color | : Colorless. |
| Odor | : Alcohol-like. |
| pH | : Not available. |
| Boiling/condensation point | : 78.5°C (173.3°F) |
| Melting/freezing point | : Not available. |
| Relative density | : 0.85 |
| Density | : Not available. |
| Vapor pressure | : 5.3 kPa (40 mm Hg) [room temperature] |
| Vapor density | : 1.59 [Air = 1] |
| Odor threshold | : Not available. |
| Evaporation rate | : Not available. |
| Viscosity | : Not available. |
| Solubility | : Insoluble in the following materials: cold water and hot water. |
| LogK_{ow} | : Not available. |

10. Stability and reactivity

| | |
|---|--|
| Chemical stability | : The product is stable. |
| Conditions to avoid | : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas. |
| Incompatible materials | : Reactive or incompatible with the following materials: oxidizing materials. |
| Hazardous decomposition products | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur. |

11. Toxicological information

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|-----------------------|---------|--------------------------|----------|
| 2,2'-ethylenedioxydiethyl dimethacrylate | LD50 Oral | Rat | 10837 mg/kg | - |
| ethanol | LC50 Inhalation Vapor | Rat | 124700 mg/m ³ | 4 hours |
| 3-trimethoxysilylpropyl methacrylate | LD50 Oral | Rat | 7 g/kg | - |
| | LD50 Oral | Rat | 23504 mg/kg | - |

Conclusion/Summary : Based on the criteria of the protocol, this product is considered non-cytotoxic per ISO 10993-5.

Chronic toxicity

Not available.

Irritation/Corrosion

11. Toxicological information

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--------------------------------------|--------------------------|---------|-------|------------------------------------|-------------|
| ethanol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 0.066666667 minutes 100 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 100 microliters | - |
| | Eyes - Severe irritant | Rabbit | - | 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 400 milligrams | - |
| 3-trimethoxysilylpropyl methacrylate | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |

Sensitizer

| Product/ingredient name | Route of exposure | Species | Result |
|-------------------------|-------------------|------------|-----------------|
| Silane Primer | skin | Guinea pig | Not sensitizing |

Carcinogenicity

Classification

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|-------------------------|-------|------|-----|-------|-----|------|
| ethanol | A3 | 1 | - | - | - | - |

Mutagenicity

Not available.

Conclusion/Summary : Not mutagenic in Ames test.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--------------------------------------|--|----------|
| ethanol | Acute EC50 17.921 mg/l Marine water | Algae - Ulva pertusa | 96 hours |
| | Acute EC50 2000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 25500 µg/l Marine water | Crustaceans - Artemia franciscana - Larvae | 48 hours |
| | Acute LC50 42000 µg/l Fresh water | Fish - Oncorhynchus mykiss | 4 days |
| | Chronic NOEC 4.995 mg/l Marine water | Algae - Ulva pertusa | 96 hours |
| | Chronic NOEC 0.375 ul/L Fresh water | Fish - Gambusia holbrooki - Larvae | 12 weeks |

Persistence/degradability

Not available.

12. Ecological information

- Partition coefficient: n-octanol/water** : Not available.
- Bioconcentration factor** : Not available.
- Mobility** : Not available.
- Toxicity of the products of biodegradation** : Not available.
- Other adverse effects** : No known significant effects or critical hazards.




13. Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|---------------------------|-----------|----------------------|---------|-----|---|--|
| TDG Classification | UN1170 | ETHANOL SOLUTION | 3 | II |  | Explosive Limit and Limited Quantity Index 1 Passenger Carrying Road or Rail Index 5 |
| IMDG Class | UN1170 | ETHANOL SOLUTION | 3 | II |  | Emergency schedules (EmS) F-E, S-D Special provisions 144 |
| IATA-DGR Class | UN1170 | Ethanol solution | 3 | II |  | Passenger and Cargo Aircraft Quantity limitation: 5 L Packaging instructions: 353 Cargo Aircraft Only Quantity limitation: 60 L Packaging instructions: 364 Limited Quantities - Passenger Aircraft Quantity limitation: 1 L Packaging instructions: Y341 Special provisions A3, A58, A180 |

PG* : Packing group

15. Regulatory information

United States inventory (TSCA 8b) : All components are listed or exempted.

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists

Canadian NPRI : The following components are listed: Ethanol

CEPA Toxic substances : None of the components are listed.

Canada inventory : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists :

- Australia inventory (AICS)**: All components are listed or exempted.
- China inventory (IECSC)**: All components are listed or exempted.
- Japan inventory**: Not determined.
- Korea inventory**: Not determined.
- Malaysia Inventory (EHS Register)**: Not determined.
- New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
- Philippines inventory (PICCS)**: Not determined.
- Taiwan inventory (CSNN)**: Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

16. Other information

Label requirements : FLAMMABLE LIQUID AND VAPOR. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

| | | |
|------------------|---|---|
| Health | * | 2 |
| Flammability | | 3 |
| Physical hazards | | 0 |
| | | |

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

Date of issue : 3/26/2015.

16. Other information

Date of previous issue : No previous validation.

Version : 1

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Section 1. Product And Company Identification

Product Name: Silane Primer

Product Use: Dental product: Dental restoration

Manufacturer: Kerr Corporation
1717 W. Collins Ave.
Orange, CA 92867-5422
U.S.A.

Information Phone Number: 1-800-841-1428 (Customer Service)

Chemical Emergency Phone Number (Chemical Spills, Leaks, Fire, Exposure or Accident only):
CHEMTREC 1-800-424-9300 (in the US) 1-703-527-3887 (Outside the US)

SDS Date of Preparation/Revision: April 1, 2019

Section 2. Hazards Identification

GHS Classification:

Flammable Liquid Category 2
Skin Irritation Category 2
Skin Sensitization Category 1
Eye Irritation Category 2A
Specific Target Organ Toxicity Single Exposure Category 3
Specific Target Organ Toxicity Repeated Exposure Category 2

Label Elements:

Danger!



Hazard Phrases

Highly flammable liquid and vapor.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause drowsiness and dizziness.
Causes damage to organs through prolonged or repeated exposure.

Precautionary Phrases:

Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
Keep container tightly closed.
Use explosion-proof electrical, ventilating, lighting, and all material-handling equipment.
Use only non-sparking tools.

Take precautionary measures against static discharge.

Do not breathe vapors.

Wash exposed skin thoroughly after handling.

Wear protective gloves and eye protection.

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

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice or attention.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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 attention.

In case of fire: Use water fog, alcohol foam carbon dioxide or dry chemical to extinguish.

Store in a well ventilated place.

Store locked up.

Dispose of contents and container in accordance with local and national regulations.

Section 3. Composition/Information on Ingredients

| Component | CAS No. | Amount |
|---|------------|---------|
| Ethanol | 64-17-5 | 60-100% |
| (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate | 1565-94-2 | 5-10% |
| Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]- | 41637-38-1 | 1-5% |
| 2,2'-ethylenedioxydiethyl dimethacrylate | 109-16-0 | 1-5% |
| 3-trimethoxysilylpropyl methacrylate | 2530-85-0 | 1-5% |

Section 4. First Aid Measures

Inhalation: Move to fresh air if symptoms occur and seek medical attention if symptoms persist.

Skin Contact: Take off contaminated clothing. Rinse skin with plenty of water. Get medical attention if irritation develops and persists.

Eye Contact: Hold eye open and rinse slowly and gently with water for several minutes. Remove contact lenses, if present, then continue rinsing. Get medical attention if irritation persists.

Ingestion: If swallowed, rinse mouth with water. If symptoms develop, get medical attention.

Most important symptoms and effects, acute and delayed: Causes moderate to severe eye irritation. Skin contact may cause dryness and irritation. May cause allergic skin reaction (sensitization.) Ingestion can cause central nervous system depression and irritating to mouth, throat and stomach. Inhalation may cause drowsiness and dizziness.

Indication of immediate medical attention and special treatment, if needed: Immediate medical attention is not required.

Section 5. Fire Fighting Measures

Suitable (and Unsuitable) Extinguishing Media: Use any media appropriate for the surrounding fire. Cool fire exposed containers with water.

Specific Hazards Arising from the Chemical: Combustion may produce carbon dioxide, carbon monoxide, and metal oxides.

Special Protective Equipment and Precautions for Fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored. Cool fire-exposed containers with water. Contain water used in firefighting from entering sewers or natural waterways.

Section 6: Accidental Release Measures

Personal precautions, Protective equipment, and Emergency procedures: Evacuate spill area and keep unprotected personnel away. Avoid contact with eyes, skin and clothing. Wear appropriate protective clothing and equipment. Do not breathe vapors.

Environmental Precautions: Avoid releases to the environment. Report spill as required by local and federal regulations.

Methods and Materials for Containment and Cleaning up: Prompt cleanup and removal are necessary. For small spills, take up in non-combustible absorbent material and shovel into container for disposal. For large spills, scoop solid spill into closing containers. This material and its container must be disposed of in a safe way, and as per local legislation. Notify authorities if product enters sewers or public waters. Wash off with plenty of water.

Section 7. Handling and Storage

Precautions for Safe Handling: Prevent contact with eyes, skin and clothing. Always wear impervious gloves, chemical safety goggles and protective clothing when handling this material. Wash thoroughly with soap and water after handling. Do not eat, drink or smoke in the work area. Do not breathe vapors. Use with adequate ventilation. Remove and wash contaminated clothing before reuse.

Empty containers retain product residues which can be hazardous. Follow all SDS precautions when handling empty containers.

Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry, well-ventilated area away from direct sunlight. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers.

Section 8. Exposure Controls / Personal Protection

Exposure Limits

| Chemical | Exposure Limit |
|----------|--|
| Ethanol | 1000 ppm TWA OSHA PEL 1000 ppm STEL ACGIH TLV |

| | |
|---|------------------|
| (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] bismethacrylate | None Established |
| Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]- | None Established |
| 2,2'-ethylenedioxydiethyl dimethacrylate | None Established |
| 3-trimethoxysilylpropyl methacrylate | None Established |

Appropriate Engineering Controls: General ventilation should be adequate for normal use. For operations where the exposure limits may be exceeded, mechanical ventilation such as local exhaust may be needed to minimize exposure. Use explosion proof electrical equipment and wiring where required.

Respiratory Protection: None under normal use conditions with adequate ventilation. For operations where the occupational exposure limits are exceeded, an approved respirator with a respirable dust cartridge or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration. Select in accordance with applicable regulations and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Hand protection: Impervious gloves are suggested to prevent skin contact. Contact your glove supplier for selection assistance.

Eye Protection: Chemical safety goggles are recommended if contact is possible.

Skin Protection: Wear protective clothing as needed to avoid skin contact and contamination of personal clothing.

Hygiene measures: Suitable eye and skin washing facilities should be available in the work area.

Section 9. Physical and Chemical Properties

| | | | |
|---|---------------------------------------|----------------------------------|------------------------|
| Appearance: | Pale yellow liquid | Odor: | Alcohol-like odor |
| Odor Threshold: | Not available | pH: | Not available |
| Melting/Freezing Point: | Not available | Boiling Point/Range: | 78.5°C (173.3°F) |
| Flash Point: | 13°C (55.4°F) (Closed cup) | Evaporation Rate: | Not available |
| Flammability: (Solid, Gas) | Not applicable | Flammability Limits: | LEL: 4.3% UEL: 19% |
| Vapor Pressure: | 5.3 kPa (40 mmHg at room temperature) | Vapor Density: | 1.59 kg/m ³ |
| Relative Density: | 0.85 | Solubilities: | Insoluble in water |
| Partition Coefficient: (N-Octanol/Water) | Not available | Autoignition Temperature: | Not available |
| Decomposition Temperature: | Not available | Viscosity: | Not available |

Section 10. Stability and Reactivity

Reactivity: The product is not expected to be reactive.

Chemical Stability: Stable under normal storage and handling conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to avoid: Avoid all possible sources of ignition (spark or flame). Do not polymerize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible Materials: Oxidizing materials.

Hazardous decomposition products: Thermal decomposition will produce mercury oxide, mercury vapors, and metal oxides.

Section 11. Toxicological Information

Potential Health Effects:

Inhalation: Can cause central nervous system depression. May cause drowsiness, dizziness, and respiratory irritation.

Skin Contact: Defatting to the skin. May cause skin dryness and irritation.

Eye Contact: Causes serious eye irritation.

Ingestion: Can cause central nervous system depression. May be irritating to mouth, throat and stomach.

Chronic Hazards: May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Skin Sensitization: No adverse effects expected. Components are not sensitizers.

Respiratory Sensitization: No data available. This product is not expected to cause respiratory sensitization.

Germ Cell Mutagenicity: None of the components have shown mutagenic activity in animal studies.

Carcinogen: Ethanol is listed as "Carcinogenic to Humans" (Group 1) by IARC. None of the other components are listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

Developmental / Reproductive Toxicity: None of the components have been shown to cause reproductive or developmental toxicity.

Specific Target Organ Toxicity (Single Exposure): Single exposure to ethanol, Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-, 2,2'-ethylenedioxydiethyl dimethacrylate may cause respiratory tract irritation. Single exposure to ethanol may also cause narcotic effects.

Specific Target Organ Toxicity (Repeated Exposure): Repeated exposure to methanol may cause damage to the liver.

Aspiration Toxicity: Not an aspiration hazard.

Acute Toxicity Values:

Ethanol: LD50 Oral rat: 7060 mg/kg; LC50 Inhalation rat: 124.7 mg/L/4 hr

Poly(oxy-1,2-ethanediyl), α,α' -[(1-methylethylidene)di-4,1-phenylene]bis[ω -[(2-methyl-1-oxo-2-propen-1-yl)oxy]-: LD50 Oral rat: >2000 mg/kg; LD50 Dermal rat: >2000 mg/kg

2,2'-ethylenedioxydiethyl dimethacrylate: LD50 Oral rat: 10837 mg/kg

3-trimethoxysilylpropyl methacrylate: LD50 Oral rat: 23504 mg/kg; LD50 Dermal rabbit: >15000 mg/kg

Section 12. Ecological Information

Toxicity:

Ethanol: 96 hr EC50 *Ulva pertusa* 17.921 mg/L; 48 hr EC50 *Daphnia magna*- 2000 µg/L;
48 hr LC50 Crustaceans 25.5 mg/L; 96 hr LC50 *Oncorhynchus mykiss* >10000 µg/L
Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-: 96 hr LD50 Fish >100 mg/L; 48 hr EC50 *Daphnia magna* >100 mg/L; 72 hr Algae >100 mg/L

Persistence and degradability: Ethanol is readily biodegradable.

Bioaccumulative Potential:

Ethanol: log P_{ow} -0.35, potential for bioaccumulative is low.
Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]- has a BCF of 2372, log P_{ow} 3.43 – 5.62, potential for bioaccumulative is high.
2,2'-ethylenedioxydiethyl dimethacrylate: log P_{ow} 1.88, potential for bioaccumulative is low.
3-trimethoxysilylpropyl methacrylate: log P_{ow} 2.1, potential for bioaccumulative is low.

Mobility in Soil: No data available.

Other Adverse Effects: No data available.

Section 13. Disposal Considerations

Disposal: For unused product, dispose of in accordance with Federal and local regulations.

Container Disposal: Dispose of empty container in accordance with Federal and local regulations.

Section 14. Transport Information

| | UN Number | UN Proper Shipping Name | Hazard Class(s) | Packing Group | Environmental Hazards |
|------------|-----------|-------------------------|-----------------|---------------|-----------------------|
| US DOT | UN1170 | Ethanol solution | 3 | II | None |
| EU ADR/RID | UN1170 | Ethanol solution | 3 | II | None |
| IMDG | UN1170 | Ethanol solution | 3 | II | None |
| IATA/ICAO | UN1170 | Ethanol solution | 3 | II | None |

Special Precautions for User: None identified

Transport in Bulk According to Annex II MARPOL 73/78 and the IBC Code: Not applicable – product is transported only in packaged form.

Section 15. Regulatory Information

U.S. Federal Regulations:

EPA SARA 311/312 Hazard Classification: Refer to Section 2 for OSHA Hazard Classification.

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

Protection Of Stratospheric Ozone: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: This product is not subject to CERCLA reporting requirements; however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

International Inventories

US EPA TSCA Inventory: All of the components of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or exempt.

Canada CEPA: All of the components of this material are listed on the DSL or exempt.

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|--------------------------------------|
| Section 16. Other Information |
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Effective Date: April 1, 2019

Supersedes Date: March 26, 2015

Revision Summary: All Sections – New SDS format

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date of preparation, however, KERR Corporation makes no warranty with respect to the accuracy or suitability of the recommendations, and assumes no liability to any use thereof.