

Safety Data Sheet
acc. to OSHA HCS

Printing date 09/24/2021

Reviewed on 10/12/2020

1 Identification

- **Product identifier**
- **Trade name:** *Silane*
- **Article number:** *SDS 5-001.15, 10325*
- **Application of the substance / the mixture** *Professional Dental Bonding Agent*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
*Ultradent Products Inc.
505 W. Ultradent Drive (10200 S)
South Jordan, UT 84095-3942
USA
onlineordersupport@ultradent.com*
- **Information department:** *Customer Service*
- **Emergency telephone number:**
*CHEMTREC (NORTH AMERICA) : (800) 424-9300
(INTERNATIONAL) : +(703) 527-3887*

2 Hazard(s) identification

- **Classification of the substance or mixture**

*GHS02 Flame**Flam. Liq. 2 H225 Highly flammable liquid and vapor.**GHS07**Eye Irrit. 2A H319 Causes serious eye irritation.**STOT SE 3 H336 May cause drowsiness or dizziness.*

- **Label elements**
- **GHS label elements** *Void*
- **Hazard pictograms** *GHS02, GHS07*
- **Signal word** *Danger*
- **Health Hazard-determining components of labeling:**
Isopropyl Alcohol
- **Hazard statements**
*Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.*
- **Precautionary statements**

<i>P210</i>	<i>Keep away from heat/sparks/open flames/hot surfaces. - No smoking.</i>
<i>P240</i>	<i>Ground/bond container and receiving equipment.</i>
<i>P241</i>	<i>Use explosion-proof electrical/ventilating/lighting/equipment.</i>
<i>P242</i>	<i>Use only non-sparking tools.</i>
<i>P243</i>	<i>Take precautionary measures against static discharge.</i>

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- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P264 Wash thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 Call a poison center/doctor if you feel unwell.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**· **NFPA ratings (scale 0 - 4)**· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**· **Description:** Mixture of the substances listed below with nonhazardous additions.· **Dangerous components:**

67-63-0	Isopropyl Alcohol	≥20-<100%
	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2A, H319; STOT SE 3, H336	
2530-85-0	Silane	≥1-<10%
	⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	

4 First-aid measures

· **Description of first aid measures**· **General information:** Immediately remove any clothing soiled by the product.· **After inhalation:** Supply fresh air; consult doctor in case of complaints.· **After skin contact:**

Immediately remove all soiled and contaminated clothing.

Immediately rinse with water.

· **After eye contact:**

Remove contact lenses, if present. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops or persists.

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- Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*
- **After swallowing:** Rinse mouth with water.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Carbon dioxide or dry powder. Water in large amounts. Alcohol resistant foam. Use fire-extinguishing media appropriate for surrounding materials.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
Heat may cause the containers to explode. Vapors may travel considerable distance to a source of ignition and flash back. Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations.
- **Advice for firefighters**
- **Protective equipment:**
Use water spray to keep fire-exposed containers cool. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
- **Additional information**
Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment. Keep unauthorized personnel away. Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
All equipment used when handling the product must be grounded. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Dike far ahead of larger spill for later recovery and disposal. In case of leakage, eliminate all ignition sources.
Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

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- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Flammable/combustible - Keep away from oxidizers, heat and flames.
Avoid contact with skin and eyes. Avoid breathing mists or vapors. Use only with adequate ventilation. Wash hands thoroughly after handling.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Take precautionary measures against static discharges.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Fumes can combine with air to form an explosive mixture.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Provide ventilation for receptacles.
Store in a cool location.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**
Store receptacle in a well ventilated area.
Store in a cool place.
Protect from contamination.
Protect from heat
See product labelling.
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** Professional Dental Bonding Agent

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

67-63-0 Isopropyl Alcohol

PEL	Long-term value: 980 mg/m ³ , 400 ppm
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REL	Short-term value: 1225 mg/m ³ , 500 ppm Long-term value: 980 mg/m ³ , 400 ppm
TLV	Short-term value: 984 mg/m ³ , 400 ppm Long-term value: 492 mg/m ³ , 200 ppm BEI

· **Ingredients with biological limit values:**

67-63-0 Isopropyl Alcohol

BEI	40 mg/L Medium: urine Time: end of shift at end of workweek Parameter: Acetone (background, nonspecific)
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· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Good general ventilation (typically 10 air changes per hour) should be used.

Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Use personal protective equipment as required.

Practice good housekeeping.

Use explosion-proof ventilation equipment.

Discard contaminated footwear that cannot be cleaned.

Routinely wash work clothing and protective equipment to remove contaminants.

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

When using do not smoke.

Special rooms for washing, showering and changing are required.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material is based on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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· **Penetration time of glove material**
The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· Form:	Liquid
· Color:	Colorless
· Odor:	Alcohol-like
· Odor threshold:	Not determined.

· **pH-value at 20 °C:** 5-8

· **Change in condition**

· Melting point/Melting range:	-89 °C
· Boiling point/Boiling range:	82 °C

· **Flash point:** 17 °C

· **Flammability (solid, gaseous):** Not applicable.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapor pressure:** Not determined.

· Density at 20 °C:	<1 g/cm ³
· Relative density	Not determined
· Vapor density	Not determined.
· Evaporation rate	Not determined.

· **Solubility in / Miscibility with**

· **Water:** Not miscible or difficult to mix.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

· Dynamic:	Not determined.
· Kinematic:	Not determined

· **Solvent content:**

· **Organic solvents:** <95 %

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Water:	<10 %
VOC content:	91.72 %
	<917.2 g/l / <7.65 lb/gal
VOC (EC)	91.72 %

· **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity Stable**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Danger of explosion.
- **Conditions to avoid**
 - Vonk
 - Flames
 - Ignition sources
 - Heat
- **Incompatible materials:**
 - Aldehydes
 - Alkalis
 - Amines
 - Isocyanates
 - Strong oxidizing agents
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

67-63-0 Isopropyl Alcohol

Oral	LD50	3,600 mg/kg (mouse)
		4,710 mg/kg (rat)
		5,030 mg/kg (rabbit)
	LC50 Fish	9,640 mg/l (Fish) (Toxicity to fish)
Dermal	LD50	>12,800 mg/kg (rabbit)
Inhalative	LC50/4 h	26.5 mg/l (mouse)
		25.52 mg/l (rat)
	LC50 Crustacean	278 mg/l (Crustacean)
	LC50(Daphnia magna)	>1,000 mg/l (daphnia) (Toxicity to aquatic invertebrates)

- **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

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- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

67-63-0 Isopropyl Alcohol

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- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

67-63-0 Isopropyl Alcohol

EC50 >100 mg/kg (Fish)

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

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

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN1993

- **UN proper shipping name**

- **DOT**

- **IMDG, IATA**

Flammable liquids, n.o.s. (Isopropanol)

FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL))

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· **Transport hazard class(es)**· **DOT**

· **Class** 3 Flammable liquids
 · **Label** 3

· **IMDG, IATA**

· **Class** 3 Flammable liquids
 · **Label** 3

· **Packing group**· **DOT, IMDG, IATA** II· **Environmental hazards:** Not Applicable.· **Special precautions for user** Warning: Flammable liquids· **Hazard identification number (Kemler code):** 33· **EMS Number:** F-E,S-E· **Stowage Category** B

· **Transport in bulk according to Annex II of
 MARPOL 73/78 and the IBC Code** Not Applicable.

· **Transport/Additional information:**· **DOT**

· **Quantity limitations** On passenger aircraft/rail: 5 L
 On cargo aircraft only: 60 L

· **IMDG**· **Limited quantities (LQ)** 1L· **Excepted quantities (EQ)** Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1993 FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL
 (ISOPROPYL ALCOHOL)), 3, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
 No further relevant information available.

· **Sara**· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

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· Section 313 (Specific toxic chemical listings):
67-63-0 Isopropyl Alcohol

· TSCA (Toxic Substances Control Act):
All components have the value ACTIVE.

· Hazardous Air Pollutants
None of the ingredients is listed.

· Proposition 65
· Chemicals known to cause cancer:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

· Carcinogenic categories
· EPA (Environmental Protection Agency)
None of the ingredients is listed.

· ACGIH Carcinogenicity (American Conference of Governmental Industrial Hygienists)	
67-63-0 Isopropyl Alcohol	A4

· NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

· Chemical safety assessment:
Device is biocompatible when used as directed by dental professionals per ISO 10993-1

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environmental, Health, and Safety

· **Contact:** Customer Service

· **Date of preparation / last revision** 09/24/2021 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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