MATERIAL SAFETY DATA SHEET
Pentron Clinical

SECTION 1
PRODUCT AND COMPANY INFORMATION

Product name: **SILANE**

Uses/Application: Solvent

Manufacturer: **Pentron Clinical**
1717 West Collins Avenue
Orange, CA 92867
USA
Telephone.: 1-800-551-0283

In Case of Emergency: CHEMTREC, U.S.: 1-800-424-9300 International: +1-703-527-3887

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SECTION 2
COMPOSITION INFORMATION

HAZARDOUS INGREDIENTS	CAS N.	%
Methanol	67-56-1	60-100
Methacryloxypropyl Trimethyloxysilane	2530-85-0	1 - 5

SECTION 3
HAZARD IDENTIFICATION

Emergency Overview:

Signal Word: WARNING!

OHSA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazard Statements: FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE BIRTH DEFECT HAZARD – CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA. POSSIBLE DEVELOPMENTAL HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE ADVERSE DEVELOPMENTAL EFFECTS, BASED ON ANIMAL DATA.

SECTION 3
HAZARD IDENTIFICATION

Precautions: Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Avoid exposure during pregnancy. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of Entry: Dermal contact. Eye contact. Inhalation, Ingestion.

Potential Acute Health Affects:

Inhalation: Toxic by inhalation. Irritating to respiratory system.
Ingestion: Toxic if swallowed.
Skin: Toxic in contact with skin. Irritating to skin.
Eyes: Irritant to eyes.

Potential chronic health effects:

Chronic effects: Contains material that may cause target organ damage, based on animal data. 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: Contains material which may cause birth defects, based on animal data.
Developmental effects: Contains material which may cause developmental abnormalities, based on animal data.
Fertility effects: No known significant effects or critical hazards.
Target organs: Contains material which may cause damage to the following organs: gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

SECTION 4
EMERGENCY FIRST AID PROCEDURES

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms persist.

Eyes: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.

Ingestion: Call medical doctor or poison control center immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

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

SECTION 5
FIRE AND EXPLOSION HAZARD DATA

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: 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, formaldehyde.

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

SECTION 6
ACCIDENTAL RELEASE MEASURES

Personal Precautions: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Do not touch or walk through spilled material. Shut off all ignition sources, no flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment

Environmental precautions: 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 spills: Stop leak if without risk. Move containers from spill area. Dilute with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion proof equipment. Dispose of via a licensed waste disposal contractor.

Large spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

SECTION 7
PRECAUTIONS FOR HANDLING & STORAGE

Precautions to be taken in Handling: Wash hands before eating, drinking, chewing gum, or using the toilet. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Precautions to be taken for storage: Store between the following temperatures: 20 to 25°C (68 to 77°F).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 6) 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.

Other Precautions: Keep out of reach of children. Avoid skin and eye contact. Avoid contamination of food.

SECTION 8
CONTROL MEASURES

Ingredient	Exposure limits
Methanol:	**ACGIH TLV (United States, 2/2010). Absorbed through skin.** TWA: 200 ppm 8 hour(s). TWA: 262 mg/m³ 8 hour(s). STEL: 250 ppm 15 minute(s). STEL: 328 mg/m³ 15 minute(s). **OSHA PEL 1989 (United States, 3/1989). Absorbed through skin** TWA: 250 ppm 8 hour(s). TWA: 325 mg/m³ 8 hour(s). STEL: 200 ppm 15 minute(s). STEL: 260 mg/m³ 15 minute(s). **NIOSH REL (United States, 6/2009). Absorbed through skin** TWA: 200 ppm 10 hour(s). TWA: 260 mg/m³ 10 hour(s). STEL: 250 ppm 15 minutes(s) STEL: 325 mg/m³ 15 minutes(s) **OSHA PEL (United States, 6/2010).** TWA: 200 ppm 8 hour(s). TWA: 260 mg/m³ 8 hour(s).

SECTION 8
CONTROL MEASURES

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Work/Hygiene Practices: Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure.

Personal Protection:

Hands: If a risk assessment indicates gloves are necessary, Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products.

Eye Protection: If risk assessment indicates safety eyewear is needed, safety eyewear complying with an approved standard should be used to avoid exposure to liquid splashes, mists or dusts.

Respiratory: If a risk assessment indicates that respirators are needed, use a properly fitted, air-purifying or air-fed respirator complying with an approved standard this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin: Based on the risks assessment, personal protective equipment for the body should be selected based on the task being performed and recommendations.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9
PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid	**Physical/Chemical:**	Organic solvent: ≥ 90%
Flash point:	Close cup: 12°C (53.6°F)	**Properties comments:**	Content of solids: ≤0.1%
Color:	Clear		
Odor:	Alcohol-like		
pH:	Not available		
Boiling/condensation point:	65°C (149°F)		
Relative density:	0.8 gm/cc		
Vapor density:	1.11 [air =1]		
Solubility:	Not available		
Viscosity:	Dynamic: Not applicable.		
Melting/freezing point:	Not available.		
Evaporation Rate:	Not available		

SECTION 10
STABILITY AND REACTIVITY DATA

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

Incompatibility & Reactive (Material to Avoid): Reactive or incompatible with the following materials: oxidizing Materials, reducing material.

Hazardous Decomposition: Under normal conditions of storage and use, hazardous decomposition will not occurred

Hazardous Polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

SECTION 11
TOXICOLOGICAL INFORMATION

Acute Toxicity:

Product/ingredient name	Result	Species	Dose	Exposure
Methanol	LC50 Inhalation Gas	Rat	145000 ppm	1 hours
	LC50 Inhalation Gas	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-

Chronic toxicity:
Not available

Irritation/Corrosion:

Product/ingredient name	Result	Species	Observation	Exposure
Methanol	Eyes – Moderate irritant	Rabbit	-	-
	Skin – Moderate irritant	Rabbit	-	-
	Eyes – Mild irritant	Rabbit	-	-
			-	-
Methacryloxypropyl Trimethyloxysilane	Skin – Mild irritant	Rabbit		

Sensitizer:
Not available.

Carcinogenicity Classification:

Mutagenicity: Not available.
Teratogenicity: Not available.
Reproductive toxicity: Not available.

SECTION 12
ECOLOGICAL INFORMATION

Ecotoxicity: This material is harmful to aquatic life with long lasting effects.

Aquatic ecotoxicity:

Product/ingredient name	Result	Species	Exposure
Methanol	Acute EC50 16.912 mg/L Marine Water	Algae – Iva Pertusa	72 hours
	Acute LC50 2500000 ug/L Marine Water	Crustaceans – Crangon crangon- Adult	48 hours
	Acute LC50 3289 mg/L Fresh water	Daphnia - Daphnia magna Neonate - <24 – hours	48 hours
	Acute LC50 >100000 ug/L Fresh water	Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g Fish - Pimephales promelas –	96 hours

Persistence/degradability: Not available.

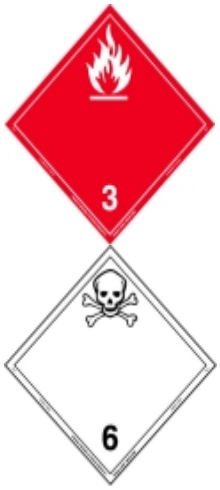
SECTION 13
DISPOSAL CONSIDERATION

Waste Disposal: The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14
TRANSPORTATION INFORMATION

Regulatory Information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN1230	Methanol	3 (6.1)	II		**Limited quantity:** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 1 L **Cargo aircraft** Quantity limitation: 60 L **Special provisions** IB2, T7, TP2

SECTION 14
TRANSPORTATION INFORMATION

IMDG Class	UN1230	METHANOL	3 (6.1)	II		**Emergency schedules (EmS):** F-E, S-D
IATA-DGR Class	UN1230	Methanol	3 (6.1)	II		**Passenger and Cargo Aircraft:** Quantity limitation: 1 L Packaging instructions: 352 **Cargo Aircraft only:** Quantity limitation: 60 L Packaging instructions: 364 **Limited Quantities - Passenger Aircraft** Quantity limitation: 1 L Packaging instructions: Y341

PG* : Packing group

SECTION 15
REGULATORY INFORMATION

Product/ingredient name	Product	CAS #	Concentration
Form R – Reporting Requirements	Methanol	64-56-1	60-100 %
Supplier Notification	Methanol	64-56-1	60-100 %

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts: The following components are listed: METHANOL
New York: The following components are listed: Methanol
New Jersey: The following components are listed: METHYL ALCOHOL; METHANOL
Pennsylvania: The following components are listed: METHANOL

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

SECTION 16
OTHER INFORMATION

HMIS (Hazardous Material Identification System) Rating:

Health 2 Flammability 3 Physical Hazard 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).
The customer is responsible for determining the PPE code for this material.

National Fire Protection Association:

Health 2 Flammability 3 Instability 0

Note: 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.