



Safety Data Sheet

Issue Date: 21-May-2015

Revision Date: 25-May-2015

Version 5

1. IDENTIFICATION

Product Identifier

Product Name Hydrox-Sil or Hydrox-Sil (Reagent)

Other means of identification

SDS # 270066e (RT-002)

Product Code 1-270066-500, 1-270454-200, 1-270455-200, 1-270457-200

UN/ID No UN2924

Recommended use of the chemical and restrictions on use

Recommended Use Analytical Reagent—GC Derivatization; Silylation Reagent.

Details of the supplier of the safety data sheet

Supplier Address

Regis Technologies, Inc.
8210 N. Austin Avenue
Morton Grove, IL 60053

Emergency Telephone Number

Company Phone Number 847-967-6000; 800-323-8144 (toll free)

Email: cservice@registech.com

www.registech.com

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)

1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Clear to cloudy liquid

Physical State Liquid

Odor Strong, pungent

Classification

Acute toxicity - Oral	Category 4	H302
Acute toxicity - Dermal	Category 4	H312
Acute toxicity - Inhalation (Dusts/Mists)	Category 4	H332
Skin corrosion/irritation	Category 1 Sub-category B	H314
Serious eye damage/eye irritation	Category 1	H314
Specific target organ toxicity (single exposure)	Category 3	H336
Flammable Liquids	Category 2	H225

Signal Word

Danger

Hazard Statements

Harmful if swallowed

Harmful in contact with skin

Harmful if inhaled

Causes severe skin burns and eye damage

May cause drowsiness or dizziness

Highly flammable liquid and vapor

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection
 Use only outdoors or in a well-ventilated area
 Do not breathe dust/fume/gas/mist/vapors/spray
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge
 Keep cool

Precautionary Statements - Response

Immediately call a poison center or doctor/physician
 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 ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Immediately call a poison center or doctor/physician
 Wash contaminated clothing before reuse
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a poison center or doctor/physician
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth
 Do not induce vomiting
 IN CASE OF FIRE: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Pyridine	110-86-1	71-82
Hexamethyldisilazane	999-97-3	12-19
Trimethylchlorosilane	75-77-4	6-10

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures**General Advice**

Provide this SDS to medical personnel for treatment.

Eye Contact	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.
Skin Contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician. Wash contaminated clothing before reuse.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head lower than hips to help prevent aspiration. Maintain airway and respiration.

Most important symptoms and effects

Symptoms	Causes severe skin burns and eye damage. Harmful in contact with skin. Harmful if inhaled. May cause drowsiness or dizziness. Harmful if swallowed.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Symptomatic and supportive care. No specific antidote. Treatment based on physician judgment in response to reactions of the patient.
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5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Carbon dioxide, dry chemical powder, or appropriate foam.

Unsuitable Extinguishing Media Water may be ineffective in fighting fire.

Specific Hazards Arising from the Chemical

Highly flammable, corrosive liquid and vapor--Do not put water directly on the fire due to vigorous reaction.--**hydrolyzes vigorously with water to produce corrosive hydrogen chloride gas that in contact with metal can produce flammable/explosive hydrogen gas**, and slowly hydrolyzes to produce ammonia that can react with hydrochloric gas to produce ammonium chloride salt. Vapors are heavier than air, may travel long distances along the ground to ignition sources and flash back. Vapor-air mixtures are explosive above flash point, within above stated limits. **Chlorosilanes may cause re-ignition to occur. A fire guard should be posted during any clean up operation.** Static electricity may accumulate and ignite vapors. Use bonding and grounding or inert gas blanketing. Containers may build pressure or rupture when heated. Container explosion may occur under fire conditions. Water spray may be used to cool fire-exposed containers.

Hazardous Combustion Products Carbon oxides, silicon oxides, chlorine, hydrogen chloride, phosgene; May decompose on contact with water.

Sensitivity to Static Discharge Take precautionary measures against static discharge.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal Precautions	Eliminate all ignition sources. Use spark proof tools. Evacuate unnecessary people from area. Isolate spilled material. Ventilate area. Wear protective clothing to prevent contact with skin and eyes (lab coat, gloves, safety glasses). Wear NIOSH/MSHA approved respirator for organic/amine gas, dust, and mists to prevent inhalation. A fire guard should be posted during any clean up operation as silane materials may easily ignite.
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Environmental Precautions See Section 12 for additional Ecological Information. Do not allow material to enter drains or watercourses.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Contain and recover material when possible. Neutralize with suitable neutralizing agent for basic-amine solutions.

Methods for Clean-Up Use chemically compatible spill pillows, or similar adsorbent material. Collect, seal in appropriate hazardous waste container, and hold for proper waste disposal. Wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing and eye/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wash face, hands, and any exposed skin thoroughly after handling. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion proof equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Keep cool.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed and store in a cool, dry and well-ventilated place. Handle and store under nitrogen. Store locked up. Protect from moisture. Use appropriate precautions for highly flammable liquids with a high potential for static accumulation. Empty containers retain product residue, (liquid/vapor), and can be dangerous.

Incompatible Materials Strong acids, acid chlorides, strong bases, alcohols, alkalis, amines. Strong oxidizers-- Fire/explosion hazard. Water, moisture, or humid air--may decompose on contact: HMDS hydrolyzes to ammonia and TMCS hydrolyze to hydrochloric acid.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Pyridine 110-86-1	TWA: 1 ppm	TWA: 5 ppm TWA: 15 mg/m ³ (vacated) TWA: 5 ppm (vacated) TWA: 15 mg/m ³	IDLH: 1000 ppm TWA: 5 ppm TWA: 15 mg/m ³

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits. Showers. Eyewash stations. Mechanical exhaust required. Hood recommended. Fume scrubber. Use adequate ventilation to keep airborne concentrations low.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Chemical safety eyewear.

Skin and Body Protection Impervious protective clothing.

Respiratory Protection NIOSH/MSHA approved respirator for organic/amine gas, dust, and mists.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Immediately remove contaminated clothing, as material may be absorbed through skin. Wash contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Strong, pungent
Appearance	Clear to cloudy liquid	Odor Threshold	Not determined
Color	Clear to cloudy		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	Not determined	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	57.9 °C / 135 °F	(TMCS)
Flash Point	< 20 °C / 68 °F	TCC
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Liquid- Not Applicable	
Upper Flammability Limits	16.3%	
Lower Flammability Limit	0.8%	
Vapor Pressure	N/A - however, this is a mixture of volatile components	
Vapor Density	>1	(Air=1)
Specific Gravity	0.927 g/cm ³	
Water Solubility	Yes—Some solubility and mild decomposition	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable if stored under nitrogen and protected from moisture.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Incompatible Materials. Extreme heat, flame, and static discharge. Ignition sources.

Incompatible Materials

Strong acids, acid chlorides, strong bases, alcohols, alkalis, amines. Strong oxidizers--Fire/explosion hazard. Water, moisture, or humid air--may decompose on contact: HMDS hydrolyzes to ammonia and TMCS hydrolyze to hydrochloric acid.

Hazardous Decomposition Products

Carbon oxides, silicon oxides, chlorine, hydrogen chloride, phosgene; May decompose on contact with water.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Causes severe eye damage.
Skin Contact	Causes severe skin burns. Harmful in contact with skin.
Inhalation	Harmful if inhaled.
Ingestion	Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Pyridine 110-86-1	= 866 mg/kg (Rat) = 891 mg/kg (Rat)	= 1121 mg/kg (Rabbit)	= 28500 mg/m ³ (Rat) 1 h = 12.898 mg/L (Rat) 4 h
Hexamethyldisilazane 999-97-3	= 847 mg/kg (Rat)	= 710 µL/kg (Rabbit) = 540 mg/kg (Rabbit)	= 8700 mg/m ³ (Rat) 4 h
Trimethylchlorosilane 75-77-4	= 100 mg/kg (Rat)	= 1500 mg/kg (Rabbit)	= 12.9 mg/L (Rat) 1 h

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Group 3 IARC components are "not classifiable as human carcinogens".

Chemical Name	ACGIH	IARC	NTP	OSHA
Pyridine 110-86-1	A3	Group 3		

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 3 IARC components are "not classifiable as human carcinogens"

STOT - single exposure May cause drowsiness or dizziness.

Numerical measures of toxicity

Product level testing not available

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product as a whole has not been tested for ecotoxicity.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Pyridine 110-86-1	520: 24 h Tetrahymena pyriformis mg/L EC50	63.4 - 73.6: 96 h Pimephales promelas mg/L LC50 flow-through 26: 96 h Cyprinus carpio mg/L LC50 semi-static 4.6: 96 h Oncorhynchus mykiss mg/L LC50 static		520: 24 h Daphnia magna mg/L EC50

Hexamethyldisilazane 999-97-3		167: 96 h Pimephales promelas mg/L LC50 static		186: 48 h Daphnia magna mg/L EC50
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Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Pyridine 110-86-1	0.65
Trimethylchlorosilane 75-77-4	3

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Pyridine 110-86-1	Toxic Ignitable

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No	UN2924
Proper Shipping Name	Flammable Liquids, Corrosive, n.o.s. (pyridine, chlorotrimethylsilane, hexamethyldisilazane)
Hazard Class	3
Subsidiary Hazard Class	8
Packing Group	II

IATA

UN/ID No	UN2924
Proper Shipping Name	Flammable Liquids, Corrosive, n.o.s. (pyridine, chlorotrimethylsilane, hexamethyldisilazane)
Hazard Class	3
Subsidiary Hazard Class	8
Packing Group	II

IMDG

UN/ID No	UN2924
Proper Shipping Name	Flammable Liquids, Corrosive, n.o.s. (pyridine, chlorotrimethylsilane, hexamethyldisilazane)
Hazard Class	3
Subsidiary Hazard Class	8
Packing Group	II

15. REGULATORY INFORMATION**International Inventories**

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Pyridine	Present	X		Present		Present	X	Present	X	X
Hexamethyldisilazane	Present	X		Present		Present	X	Present	X	X
Trimethylchlorosilane	Present	X		Present		Present	X	Present	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Pyridine 110-86-1	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Trimethylchlorosilane 75-77-4		1000 lb	

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Pyridine - 110-86-1	110-86-1	71-82	1.0

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Pyridine - 110-86-1	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Pyridine 110-86-1	X	X	X
Hexamethyldisilazane 999-97-3	X		
Trimethylchlorosilane 75-77-4	X	X	X

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	3	3	2	W
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Personal Protection
	33/ (/ means not chronic)	3	2	Not determined

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Revision Note: New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet