

Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Hydrox-Sil

1 . Identification of the material and supplier

Names

Product name : Hydrox-Sil
Part No. : CP8261A
ADG : FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Pyridine, 1,1,1,3,3,3-Hexamethyldisilazane)

Supplier

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number : Chemtrec: +(61)-290372994

Uses

Area of application : Industrial applications, Professional applications.
Material uses : Analytical chemistry.
25 ml Bottle

2 . Hazards identification

Classification : F; R11
Xn; R20/21/22
C; R34

Risk phrases : R11- Highly flammable.
R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
R34- Causes burns.

Safety phrases : S6- Keep under nitrogen.
S7/8- Keep container tightly closed and dry.
S9- Keep container in a well-ventilated place.
S16- Keep away from sources of ignition - No smoking.
S23- Do not breathe vapour.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S30- Never add water to this product.
S33- Take precautionary measures against static discharges.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Statement of hazardous/dangerous nature : HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3 . Composition/information on ingredients

Mixture : Yes.

Ingredient name	CAS number	Concentration
Pyridine	110-86-1	>60
1,1,1,3,3,3-Hexamethyldisilazane	999-97-3	10 - <30
Chlorotrimethylsilane	75-77-4	<10

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

- Inhalation** : Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Protection of first-aiders** : 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.
- Advice to doctor** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

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.

Highly 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 vapour/gas is heavier than air and will spread along the ground. Vapours 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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
carbonyl halides
metal oxide/oxides
Ammonia.
cyanides

5 . Fire-fighting measures

- 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.
- Special remarks on explosion hazards** : May cause flash fire. Keep away from: open flames, sparks and static discharge
Vapour may travel a considerable distance to source of ignition and flash back.
Vapours may form explosive mixtures with air.
- Hazchem code** : •3WE

6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilt 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** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry 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.

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. 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 earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
- 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Exposure limits
Pyridine	Safe Work Australia (Australia, 8/2005). TWA: 16 mg/m ³ 8 hours. TWA: 5 ppm 8 hours.

8 . Exposure controls/personal protection

- 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.
- Exposure controls**
- 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, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- 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.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates 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** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- 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.

9 . Physical and chemical properties

- Physical state** : Liquid.
- Colour** : Clear.
- Odour** : Pungent. [Strong]
- Boiling point** : 115.3°C (239.5°F)
- Melting point** : -42°C (-43.6°F)
- Vapour pressure** : 2.1 kPa (16 mm Hg) [room temperature]
- Relative density** : 0.927
- Flash point** : Closed cup: 19°C (66.2°F) [Tagliabue.]
- Flammable limits** : Lower: 1.8%
Upper: 12.4%
- Vapour density** : 2.73 [Air = 1]
- pH** : Not available.
- Auto-ignition temperature** : Not available.

9 . Physical and chemical properties

Solubility : Soluble in the following materials: cold water and hot water. May decompose in contact with water.

10 . Stability and reactivity

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, 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.

Materials to avoid : oxidizing materials
Other: acids, alkalis and moisture.
Incompatible with alcohols. Incompatible with amines.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Potential acute health effects

Inhalation : Harmful by inhalation. Can cause central nervous system (CNS) depression. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Harmful if swallowed. Can cause central nervous system (CNS) depression. May cause burns to mouth, throat and stomach.

Skin contact : Corrosive to the skin. Causes burns. Harmful in contact with skin.

Eye contact : Corrosive to eyes. Causes burns.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Pyridine	LC50 Inhalation Gas.	Rat	9010 ppm	1 hours
	LC50 Inhalation Gas.	Rat	4500 ppm	4 hours
	LD50 Dermal	Rabbit	1.12 g/kg	-
	LD50 Oral	Rat	891 mg/kg	-
	LC50 Inhalation Vapour	Rat	8700 mg/m ³	4 hours
1,1,1,3,3,3-Hexamethyldisilazane	LD50 Oral	Rat	850 mg/kg	-

Conclusion/Summary : Not available.

Potential chronic health effects

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Pyridine	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
1,1,1,3,3,3-Hexamethyldisilazane	Skin - Severe irritant	Rabbit	-	500 microliters	-
Chlorotrimethylsilane	Eyes - Moderate irritant	Rabbit	-	5 microliters	-
	Skin - Moderate irritant	Rabbit	-	500 microliters	-

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

11 . Toxicological information

- Developmental effects** : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Ingestion** : Adverse symptoms may include the following:
stomach pains
- Skin** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Eyes** : Adverse symptoms may include the following:
pain
watering
redness
- Target organs** : Contains material which may cause damage to the following organs: blood, kidneys, the nervous system, liver, gastrointestinal tract, upper respiratory tract, skin, eyes, central nervous system (CNS).

12 . Ecological information

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

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Pyridine	Acute EC50 110000 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 182000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 520000 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 26000 µg/l Fresh water	Fish - Cyprinus carpio	96 hours

Other ecological information

Bioaccumulative potential







Product/ingredient name	LogP _{ow}	BCF	Potential
Pyridine	0.65	-	low
1,1,1,3,3,3-Hexamethyldisilazane	2.62	-	low
Chlorotrimethylsilane	3	-	low

- Other adverse effects** : No known significant effects or critical hazards.

13 . Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimised 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. 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. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADG	UN2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Pyridine, 1,1,1,3,3, 3-Hexamethyldisilazane)	3 (8)	II	 	Hazchem code •3WE
IMDG	UN2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Pyridine, 1,1,1,3,3, 3-Hexamethyldisilazane)	3 (8)	II	 	Emergency schedules (EmS) F-E, S-C
IATA	UN2924	Flammable liquid, corrosive, n.o.s. (Pyridine, 1,1,1,3,3, 3-Hexamethyldisilazane)	3 (8)	II	 	Passenger and Cargo Aircraft Quantity limitation: 1 L Packaging instructions: 352 Cargo Aircraft Only Quantity limitation: 5 L Packaging instructions: 363 Limited Quantities - Passenger Aircraft Quantity limitation: 0.5 L Packaging instructions: Y340

PG* : Packing group

15 . Regulatory information

[Standard Uniform Schedule of Medicine and Poisons](#)

Not regulated.

[Control of Scheduled Carcinogenic Substances](#)

Ingredient name	Schedule
No listed substance	

Australia inventory (AICS) : All components are listed or exempted.

16 . Other information

Date of issue : 27/02/2013

Date of previous issue : No previous validation.

✔ Indicates information that has changed from previously issued version.

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