

MATERIAL SAFETY DATA SHEET (MSDS) of KH-75

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY		
1.1	Production	KH-75 SILANE
1.2	Generic Description:	Sulfur silane
1.3	Physical form:	Liquid
1.4	Color:	Yellowy
1.5	Odor:	Sulfur
1.6	NFPA Profile:	Health 2 Flammability 3 Instability/Reactivity 0
1.7	Manufacturer:	Nanjing Capatue Chemical Co., Ltd
1.8	Address:	No. 20 JiangJun Avenue, Jiangning Development Zone, Nanjing, Jiangsu Province, P. R. China P.C: 211100
1.9	Telephone:	(0086-25)-86371193 Fax: (0086-25) 86371191-0
1.10	24Hour Emergency Telephone:	(0086-25)-86371192
1.11	Connect with:	Anhuanbu

2. HAZARDS IDENTIFICATION
Normal precautions common to safe manufacturing practice should be followed in handling and storage.

3. COMPOSITION/INFORMATION ON INGREDIENTS		
<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
56706-10-6	>99.0%	Bis(3-Triethoxysilylpropyl) disulfide
64-17-5	< 0.1 %	Ethanol
Note(s): Additional ethanol may be formed by reaction with moisture.		
See Section 15 for chemicals appearing on Federal or State Right-To-Know lists.		

4. FIRST AID MEASURES		
4.1	Eye contact:	Flush eyes thoroughly with water for several minutes. Obtain medical attention if discomfort persists.
4.2	Skin:	Wash skin with soap and water.
4.3	Inhalation:	Remove to fresh air.
4.4	Swallowing	Rinse mouth with water. Obtain medical attention.
4.5	Notes to Physician:	This product contains ethanol. Symptoms vary with the alcohol level of the blood. Mild alcoholintoxication occurs at blood levels between 0.05%-0.15% and approximately 25% of individuals will show signs of intoxication at these levels. Above 0.15% the person is definitely under the influence of ethanol and 50%-95% of individuals at this level are clinically intoxicated. Severe poisoning occurs when the blood ethanol level is

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0.3%-0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids. In the presence of hypoglycemia, administer 5%-10% glucose intravenously, plus thiamine 100 mg intramuscularly. Hemodialysis is indicated if the ethanol concentration in the blood is above 5 mg/ml. Naloxone may be useful to reverse clinical alcoholic coma and 0.4-1.2 mg intravenously may arouse ethanol-intoxicated patients.

5. FIRE FIGHTING MEASURES

- 5.1 Flash Point:** 106 °C (222 °F)
- 5.2 Flammable limits**
Lower limit: Not available
Upper limit: Not available
- 5.3 Special fire fighting procedures:**
Do not direct a solid stream of water or foam into hot, burning pools: this may cause frothing and increase fire intensity.
- 5.4 Special protective equipment for firefighters:**
Self-contained breathing apparatus. Body covering protective clothing
- 5.5 Extinguishing media**
Suitable: Large fires: - alcohol-type foam or universal-type foams
Small fires: - CO₂ or dry chemical
Unsuitable: None.
- 5.6 Unusual fire and explosion hazards**
None known.

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions**
Avoid contact with eyes and skin. Avoid contact with liquid and vapors. Wear suitable protective equipment.
- 6.2 Environmental precautions**
Prevent runoff
- 6.3 Methods for cleaning up**
Cover with absorbent or contain.
Collect for disposal.
Observe government regulations.

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7. HANDLING AND STORAGE

Handling precautions

Do not swallow. Do not get in eyes, on skin, on clothing. Avoid breathing vapor, aerosol and mist. Use with adequate ventilation. Wash thoroughly after handling.

Storage requirements

Keep away from heat and flame. Keep container closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection May be needed if product is used in a confined or poorly ventilated area.

Hand protection / protective gloves Recommended order of use: 4H, Butyl, Neoprene, Nitrile (NBR), PVC-coated

Eye protection Safety glasses with side shields.

Skin protection Chemical protective clothing.

Other protective equipment Eye bath
Safety shower

Engineering Controls

Ventilation

General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment.

Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

A vent scrubber should be used to minimize odor

EXPOSURE LIMITS

Component	Type	Value	Remark
Ethanol	TWA, OSHA	1,000.0 ppm	
	TWA, ACGIH	1,000.0 ppm	

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:	Liquid
Color:	Yellowy
Odor:	Sulfur
Specific Gravity ρ₂₀:	1.040
Freezing/Melting Point:	< -78 °C at STP unless specified below.
Boiling Point:	Not available
Vapor Pressure @ 25°C:	< 1.33 hPa (1.00 mmHg) at 20 °C
Vapor Density:	Not determined.
Solubility in Water:	Reacts slowly.

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pH:	Not determined.
Volatile Content:	Not determined
Flash Point :	100 °C (222 °F) Method: Pensky-Martens closed cup ASTM D 93
Upper explosion limits:	Not available
Lower explosion limits:	Not available
Percent volatiles:	Not determined.
Molecular weight :	475

Note: The above information is not intended for use in preparing product specifications. Contact Capatue Chemical before writing specifications.

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable
Hazardous	Hazardous polymerization will not occur.
Polymerization:	Will not occur
Conditions to Avoid:	Do not store at temperatures: >60 °C (140 °F)
Materials to Avoid:	Acids. Bases. Reacts with water or moisture to form: Ethanol.

Hazardous Decomposition Products

Burning can produce the following combustion products: Oxides of carbon, oxides of sulfur and oxides of silicon.

Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

11. TOXICOLOGICAL INFORMATION

11.1 SWALLOWING

Acute effects	This product hydrolyzes in the stomach to form ethanol. May cause the following effects: <ul style="list-style-type: none">- dizziness- faintness- drowsiness- decreased awareness and responsiveness- euphoria- abdominal discomfort
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	<ul style="list-style-type: none"> - nausea - vomiting - staggering gait - lack of coordination - coma
Effects of repeated overexposure	Long-term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis.
Test results	Acute toxicity: LD50 - Rats Result: > 5,000 mg/kg
11.2 SKIN ABSORPTION	
Acute effects	No evidence of harmful effects from available information.
Test results	Acute toxicity: LD50 - Rats Result: > 2,000 mg/kg
11.3 INHALATION	
Acute effects	May cause irritation of the respiratory tract. May cause the following effects: <ul style="list-style-type: none"> - nasal discomfort and discharge - chest pain - coughing
11.4 SKIN CONTACT	
Acute effects	May cause minor irritation. May cause the following effects: <ul style="list-style-type: none"> - itching - slight local redness
Effects of repeated overexposure	May cause the following effects: <ul style="list-style-type: none"> - a dermatitis Prolonged and/or repeated contact may result in: <ul style="list-style-type: none"> - defatting of the skin
Test results	Skin irritation: Species: Rabbit Result: Slight irritation
11.5 EYE CONTACT	
Acute effects	May cause mild discomfort. May cause the following effects: <ul style="list-style-type: none"> - excess redness of the conjunctivae
Test results	Eye irritation: Species: Rabbit Result: Mild irritation
11.6 Medical conditions aggravated by overexposure	

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Repeated exposure to ethanol may aggravate liver injury produced from other causes.

11.7 Other effects of overexposure

Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute the fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders, and small size head.

11.8 SENSITIZATION

Test results: Species:	Guinea pigs
	Result: Negative
	Method: OECD-Guideline No. 406

11.9 MUTAGENICITY

Genetic toxicity in vitro:	Test type: Salmonella Typhimurium/ Escherichia coli
	Result: Negative

11.10 SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH

The following information is based on ethanol:

The International Agency for Research on Cancer (IARC) has determined that the consumption of alcoholic beverages is causally related to the occurrence of malignant tumors of the oral cavity, pharynx, larynx, esophagus and liver in humans. The carcinogenic response attributed to drinking alcoholic beverages has not been verified in studies with laboratory animals. Established uses of denatured ethanol and non-beverage uses of pure ethanol are not considered to pose any significant cancer hazard.

12. ECOLOGICAL INFORMATION

All available ecological data have been taken into account for the development of the hazard and precautionary information contained in this Safety Data Sheet.

Biodegradation: Microorganisms
Method: OECD-Guideline No. 301 F
Remark: Not readily biodegradable.

AQUATIC TOXICITY

Acute toxicity fish:	Static - LC50 - Brachydanio rerio
	Result: > 100 mg/l
	Exposure time: 96 h
	Method: OECD 203

Aquatic toxicity to plants:	Static - NOEC - Scenedesmus subspicatus
	Result: > 100 mg/l
	Inhibition of growth
	Exposure time: 72 h
	Method: OECD 201

Microorganisms:	Static - NOEC - Bacteriae
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	Result: > 1,000 mg/l Exposure time: 3 h Method: OECD-Guideline No. 209
Acute toxicity to Aquatic Invertebrates	Static - EC50 - Daphnia magna Result: > 100 mg/l Exposure time: 48 h Method: OECD-Guideline No. 202, part 1

13. DISPOSAL CONSIDERATIONS

General:

Incinerate in a furnace where permitted under appropriate Federal, State, and local regulations. State or local laws may impose additional regulatory requirements regarding disposal. Call Capatue Chemical, if additional information is required.

14. TRANSPORT INFORMATION

14.1 DOT Classification

This product is not regulated by DOT

14.2 Freight description road:

CHEMICALS, NOIBN

14.3 IMDG Classification

This product is not regulated by IMDG

14.4 ICAO Classification

This product is not regulated by ICAO.
Call Capatue Chemical if additional information is required.

15. REGULATORY INFORMATION

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of hazardous substances equal to or greater than the reportable quantities (RQ's) in 40CFR302.4.

Components present in this product at a level which could require reporting under the statute are:

**** NONE ****

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQ's) and release reporting based on Reportable Quantities (RQ's) in 40CFR355 (used for SARA 302 and 304).

Components present in this product at a level which could require reporting under the statute are:

**** NONE ****

Massachusetts Right-To-Know Substance List (MSL)--Hazardous Substances and Extraordinarily Hazardous

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Substances on the MSL must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

**** NONE ****

Pennsylvania Right-To-Know Hazardous Substance List--Hazardous Substances and Special Hazardous Substances on the list must be identified when present in products.

Components present in this product at a level which could require reporting under the statute are:

**** NONE ****

EPA Hazard Categories (SARA 311, 312):

None

California Proposition 65

This product contains no levels of listed substances, which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute **California SCAQMD**

Rule 443.1 VOC's

Volatile Organic Components (VOC's) = Substances with vapor pressure of \Rightarrow 0.5 mmHg at 104°C (219.2°F).

****NOT DETERMINED****

CHEMICAL INVENTORY

Canada: The ingredients of this product are included on or exempt from the DSL.

Europe: 254-896-5

United States: The components of this product are listed on the TSCA inventory or are exempt.

Korea: The ingredients of this product are on the ECL.

16. OTHER INFORMATION

RECOMMENDED USES AND RESTRICTIONS

Please consult the product and/or application information bulletins for this product.

HMIS RATING

Health: 1 Flammability: 1 Reactivity: 1 PPI: X

LEGEND

STP	Standard temperature and pressure
W/W	Weight/Weight
0 (HMIS)	Minimal hazard
1 (HMIS)	Slight hazard
2 (HMIS)	Moderate hazard
3 (HMIS)	Serious hazard
4 (HMIS)	Severe hazard
X (HMIS)	Personal protection rating to be supplied by user depending on use conditions

Prepared by: Nanjing Capatue Chemical Co., Ltd

These data are offered in good faith as typical values and not as product specifications. No warranty, either

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expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.



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