

MATERIAL SAFETY DATA SHEET (MSDS)

Organofunctional Silane SCA-A20M

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY		
1.1	Production	SCA-A20M
1.2	Physical form:	Liquid
1.3	Color:	Colorless
1.4	Chemical Family:	Organofunctional Silane Ester
	HMIS	Flammability 1 Reactivity 2 Health 3
	NFPA	Flammability 1 Reactivity 2 Health 3
1.5	Manufacturer:	Nanjing Capatue Chemical Co., Ltd
1.6	Address:	20 Jiangjun Avenue, Jiangning Development Zone, Nanjing, Jiangsu Province, P. R. China P.C: 211100
1.7	Telephone:	(0086-25)-86371193 Fax: (0086-25) 86371191-0
1.8	24Hour Emergency Telephone:	(0086-25)-86371192
1.9	Connect with:	Anhuanbu

2. HAZARDS IDENTIFICATION	
EMERGENCY OVERVIEW	
DANGER! Harmful or fatal if swallowed. Causes eye burns. May cause asthma with possible long-term lung damage. May cause eye damage and blindness if swallowed. May cause allergic skin reaction. Cross-sensitization to other amines may occur. May cause dizziness and drowsiness. May cause heart muscle damage. May cause liver and kidney damage.	
Form : liquid color : Clear, pale odor: Amine-like	
<u>POTENTIAL HEALTH EFFECTS</u>	
INGESTION	Contains methanol. Methanol may cause nausea, abdominal pain, vomiting, headache, dizziness, shortness of breath, weakness, fatigue, leg cramps, restlessness, confusion, drunken behavior, visual disturbances, drowsiness, coma, and death. There may be a delay of several hours between swallowing methanol and the onset of signs and symptoms. The effects observed are in part due to acidosis and partially to cerebral edema. Visual effects include blurred vision, diplopia, changes in color perception, restriction of visual fields, complete blindness. Ingestion of moderate quantities of methanol also produces metabolic acidosis. Onset of symptoms may be delayed up to 48 hours. 60-200 ml methanol is fatal dose for most adults. Ingestion of as little as 10 ml methanol has caused

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	blindness. With massive overdoses, liver, kidney and heart muscle injuries have been described.
Skin	May cause mild irritation. May cause the following effects: Itching - slight local redness - swelling
Inhalation	Short-term harmful health effects are not expected from vapor generated at ambient temperature. However, this material is capable of forming methanol if hydrolyzed. Methanol vapor may cause dizziness, drowsiness, disturbances of vision, and tingling, numbness, and shooting pains in the hands and forearms. Long-term repeated overexposure to methanol vapor concentrations of 3000ppm or greater may allow a cumulative effect to occur with resulting nausea, vomiting, headache, ringing in the ears, insomnia, trembling, unsteady gait, vertigo, clouded and double vision. Liver and/or kidney injury may occur. Prolonged overexposure at levels of 800-1000 ppm may result in severe eye damage in some persons.
Eyes	Causes severe irritation. Causes the following effects: Discomfort Pain - excess blinking – tear production - marked excess redness of the conjunctivae - swelling of the conjunctivae.
Medical conditions aggravated	May aggravate: - an existing kidney disease - an existing liver disease Skin contact may aggravate: - an existing dermatitis
Subchronic (target organ)	Respiratory system; Eyes; Skin; Heart; Liver; Kidney
Chronic effects/ carcinogenicity	This product or one of its ingredients present at 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA.
Routes of exposure	Inhalation; Ingestion; Eyes; Dermal

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
67-56-1	<1 %	Methanol
1760-24-3	>98 %	3-Aminoethylaminopropyltrimethoxysilane
68845-16-9	<1%	N,N'-Bis(3-trimethoxysilylpropyl)-1,2-ethanediamine
	<1 %	Related Silanes and Silsesquioxanes

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4. FIRST AID MEASURES		
4.1	Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
4.2	Skin:	Wash off immediately with soap and water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. Obtain medical attention.
4.3	Inhalation:	Remove to fresh air. Artificial respiration and /or oxygen may be necessary. Obtain medical attention immediately.
4.4	Ingestion:	If conscious, drink plenty of water. Induce vomiting if person is conscious. Obtain medical attention immediately.
4.5	Note to physician	Product may hydrolyze upon contact with body fluids in the gastrointestinal tract to produce additional methanol; therefore, consider the signs/symptoms of methanol poisoning and also observe the known latency period of several days.

5. FIRE FIGHTING MEASURES	
Flash Point Method:	ASTM D 93
Flash Point:	138 °C; 280 °F
Ignition temperature	No data available
Flammable limits in air –lower (%)	Not available
Flammable limits in air –upper (%)	Not available
Sensitivity to mechanical impact	No
Sensitivity to static discharge	Sensitivity to static discharge is not expected.
Extinguishing Media:	All standard extinguishing agents are suitable.
Special fire fighting procedures	Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.
Fire Fighting precautions	This material is reactive with water, but the reaction will not significantly increase the fire severity.

6. ACCIDENTAL RELEASE MEASURES
<p>Action to be taken if material is released or spilled</p> <p>Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.</p>

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Environmental precautions:

Do not flush into surface water or sanitary sewer system.

7. HANDLING AND STORAGE

Handling and storage precautions

Avoid contact with skin and eyes. Keep away from children.

Other Precautions:

If mixed with water, methanol will be formed; Methanol vapors are toxic and flammable so special ventilation may be needed. DANGER! Harmful or fatal if swallowed due to methanol production in the stomach.

Storage

Keep container closed. Store in original container.

Further information on storage conditions

No data available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls

Use only in an area equipped with a safety shower; Eye wash bottle with pure water ; General (mechanical) room ventilation is expected to be satisfactory if handled at low temperatures or in covered equipment; Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

Respiratory protection

If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations.

Protective gloves

Impermeable or chemical resistant gloves.

Eye and face protection

Safety glasses.

Other protective equipment

Safety shoes, Protective suit.

Exposure Guidelines

Component	CAS RN	Source	Value
Methanol	67-56-1	ACGIH, TWA	200 ppm
Methanol	67-56-1	ACGIH, STEL	250 ppm
Methanol	67-56-1	ACGIH, SKIN_DES	Can be absorbed through the skin.
Methanol	67-56-1	OSHA Z1, PEL	200 ppm; 260 mg/m3

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

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Color:	colorless
Odor:	Amine -like
Boiling Point- C & F:	259 °C; 498 °F
Vapor pressure (20C) (MM H G):	<1
Evaporation Rate & Reference:	<1
Freezing point	< -36 °C; -33 °F
Voc excl.H2O&exempts(G/L)	205.40
Vapor density(air=1):	Heavier than air
Volatile organic content (VOL):	Not determined
Specific gravity(water=1)	1.03
Solubility in water (20 °C):	Reacts rapidly

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 Polymerization:	Will not occur
Hazardous thermal decomposition/ combustion products	Burning can produce the following combustion products; Oxides of Carbon; Oxides of Silicon; Oxides of nitrogen; 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.
Incompatibility (Materials to Avoid):	Reaction with water or other aqueous media is rapid and exothermic. The addition of small amounts of water (in the range of 2-15%) can produce an exothermic reaction which generates alcohol to the extent that the resulting solution can reach a temperature which exceeds the flash point of the new solution. If a water solution is desired, add the product to water, and not vice versa.
Conditions to avoid :	None known.

11. Toxicological information

ACUTE ORAL
LD50; Species: rat; > 2,000 mg/kg;
ACUTE DERMAL

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LD50; Species: rabbit; > 2,000 mg/kg;

ACUTE INHALATION

Remarks: No data available

OTHER

Long-term repeated overexposure to methanol vapor concentrations of 3000 ppm or greater may allow a cumulative effect to occur with resulting nausea, vomiting, headache, ringing in the ears, insomnia, trembling, unsteady gait, vertigo, clouded and double vision. Liver and/or kidney injury may occur. Prolonged overexposure at levels of 800-1000 ppm may result in severe eye damage in some persons.

SENSITIZATION

No data available

SKIN IRRITATION

Species: rabbit; Result: slight irritation

EYE IRRITATION

Species: rabbit; Result: Severe irritation Causes corneal injury.

MUTAGENICITY

No data available

OTHER EFFECTS OF OVEREXPOSURE

Inhalation of ethyleneamines may cause sensitization of the respiratory tract and the development of an asthmatic reaction on further exposure. There may be susceptible (*) individuals who develop long term hyperreactive airways, asthma and other respiratory injury following exposure to extremely low concentrations of ethyleneamines, even below the irritation threshold. Other respiratory irritants may produce a reaction in individuals whose airways have become hyperreactive. Note (*): Since there are no definitive screening methods available to identify susceptible individuals, we suggest that people with asthma, or other longstanding respiratory conditions (for example, chronic bronchitis, emphysema, etc.) should be protected from any potential exposure to ethyleneamines. Skin contact may cause sensitization and an allergic skin reaction., Cross-sensitization may occur by skin contact with this material and other amines.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGY

The product degrades through hydrolysis into alcohols and silanol- and/or siloxanol compounds.

ECOTOXICITY

No data available

DISTRIBUTION

No data available

CHEMICAL FATE

No data available

Component data 3-Aminoethylaminopropyltrimethoxysilane

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Toxicity to fish : LC50
 Species: Lepomis macrochirus
 Result: > 100 mg/l
 Component data 3-Aminoethylaminopropyltrimethoxysilane
 Toxicity to other organisms : EC50
 Species: Daphnia magna (Water flea)
 Result: 87.4 mg/l
 Exposure time: 48 h
 Component data 3-Aminoethylaminopropyltrimethoxysilane
 Toxicity to algae : IC50
 Species: Algae
 Result: 30.7 mg/l

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Disposal should be made in accordance with federal, state and local regulations.

14.1 DOT Road Shipment Information

Proper Shipping Name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
Hazard Technical Name	3-Aminoethylaminopropyltrimethoxysilane
Hazard Class	8
UN-No	2735
Packaging Group	II
Hazard Label(s)	CORROSIVE

14.2 Ocean Shipment (IMDG)

Proper Shipping Name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
Hazard Technical Name	3-Aminoethylaminopropyltrimethoxysilane
Hazard Class	8
UN-No	2735
Packaging Group	II
Hazard Label(s)	CORROSIVE
Marine Pollutant	Not Applicable

14.3 Air Shipment (IATA)

Proper Shipping Name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
Hazard Technical Name	3-Aminoethylaminopropyltrimethoxysilane
Hazard Class	8
UN-No	2735
Packaging Group	II
Hazard Label(s)	CORROSIVE

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Call Capatue Chemical if additional information is required.

15. REGULATORY INFORMATION

Inventories

Korea existing chemical y(Positive listing)

Inventory (KECI)

Japan inventory of existing &new chemical y(Positive listing)

substances (ENCS)

EU list existing chemical substances y(Positive listing)

Australia inventory of chemical substances (AICS) y(Positive listing)

Philippines inventory of chemical and chemical substances(PICCS) y(Positive listing)

TSCA list y(Positive listing)

China inventory of existing chemical substances y(Positive listing)

Canada DSL Inventory y(Positive listing)

Canada NDSL Inventory n(Negative listing)

US Regulatory Information

SARA(311,312)HAZARD CLASS

Acute health hazard , chronic health hazard

SARA(313)CHEMICALS

67-56-1, Methanol.

CALIFORNIA PROPOSITION 65

This product does not contain any chemicals known to state of California to cause cancer, birth or any other reproductive defects.

Canadian Regulatory Information

WHMIS HAZARD CLASS

D2B - Toxic Material Causing Other Toxic Effects

F - Dangerously reactive material.

D2A - Very Toxic Material Causing Other Toxic Effects

16. OTHER INFORMATION

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 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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