

## MATERIAL SAFETY DATA SHEET (MSDS)

### Organofunctional Silane SCA-A20T

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY		
1.1	<b>Production</b>	SCA-A20T
1.2	<b>Physical form:</b>	Liquid
1.3	<b>Color:</b>	Colorless
1.4	<b>Chemical Family:</b>	Organofunctional Silane Ester
	<b>HMIS</b>	Flammability 1    Reactivity 2    Health 3
	<b>NFPA</b>	Flammability 1    Reactivity 2    Health 3
1.5	<b>Manufacturer:</b>	Nanjing Capatue Chemical Co., Ltd
1.6	<b>Address:</b>	No. 20 JiangJun Avenue, Jiangning Development Zone, Nanjing, Jiangsu Province, P. R. China    P.C: 211100
1.7	<b>Telephone:</b>	(0086-25)-86371193    Fax: (0086-25) 86371191-0
1.8	<b>24Hour Emergency Telephone:</b>	(0086-25)-86371192
1.9	<b>Connect with:</b>	Anhuanbu

2. HAZARDS IDENTIFICATION	
<b>EMERGENCY OVERVIEW</b>	
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, straw    odor: Amine-like	
<b><u>POTENTIAL HEALTH EFFECTS</u></b>	
<b>INGESTION</b>	This product hydrolyzes in the stomach to form 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

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	methanol has caused blindness. With massive overdoses, liver, kidney and heart muscle injuries have been described.
<b>Skin</b>	May cause minor irritation. May cause the following effects: slight local redness
<b>Inhalation</b>	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.
<b>Eyes</b>	Causes severe irritation. Causes the following effects: discomfort-pain-excess blinking- tear production-marked excess redness of the conjunctivae-swelling of the conjunctivae-chemical burns of the eye.
<b>Medical conditions aggravated</b>	May aggravate : an existing kidney disease- an existing liver disease.
<b>Subchronic (target organ)</b>	Liver , kidney ,heart ,lungs, respiratory system.
<b>Chronic effects/ carcinogenicity</b>	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.
<b>Routes of exposure</b>	Eyes, Dermal, Ingestion

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
67-56-1	<1 %	Methanol
3069-29-2	>97%	3-Aminoethylaminopropylmethyldimethoxysilane
	1-3%	Unidentified impurities

### 4. FIRST AID MEASURES

<b>4.1</b>	<b>Eye contact:</b>	Immediately flush eyes with water and continue washing for at least 15 minutes. Obtain medical attention immediately.
<b>4.2</b>	<b>Skin:</b>	Wash off immediately with soap and water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. Obtain medical attention.

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<b>4.3</b>	<b>Inhalation:</b>	Remove to fresh air. Artificial respiration and /or oxygen may be necessary. Obtain medical attention immediately.
<b>4.4</b>	<b>Ingestion:</b>	If patient is fully conscious , give two glasses of water. Induce vomiting .Obtain medical attention immediately.
<b>4.5</b>	<b>Note to physician</b>	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

<b>Flash Point Method:</b>	Pensky- Martens closed cup ASTM D93
<b>Flash Point:</b>	> 93 °C; > 200 °F
<b>Flammable limits in air –lower(%)</b>	Not available
<b>Flammable limits in air –upper (%)</b>	Not available
<b>Sensitivity to mechanical impact</b>	No
<b>Sensitivity to static discharge</b>	Sensitivity to static discharge is not expected.
<b>Extinguishing Media:</b>	All standard extinguishing agents are suitable.
<b>Special fire fighting procedures</b>	Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.
<b>Fire Fighting precautions</b>	Do not direct a solid stream of water or foam into hot ,burning pools: this may cause frothing and increase fire intensity

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Action to be taken if material is released or spilled</b>
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.

#### 7. HANDLING AND STORAGE

<b>Handling and storage precautions</b>
Do not swallow. Do not get in eyes. Do not breathe vapor. Avoid contact with skin. Keep away from children. Attention: Not for injection into humans.
<b>Other Precautions:</b>
Danger! Harmful or fatal if swallowed due to methanol production in the stomach.
<b>Storage</b>

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Keep container closed. Store in original container.

**Further information on storage conditions**

No data available

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Engineering controls</b>	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.
<b>Respiratory protection</b>	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.
<b>Protective gloves</b>	Impermeable or chemical resistant gloves.
<b>Eye and face protection</b>	Safety glasses.
<b>Other protective equipment</b>	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

<b>Physical Form:</b>	Liquid
<b>Color:</b>	colorless
<b>Odor:</b>	Amine -like
<b>Boiling Point(760mmHg) °C:</b>	256
<b>Vapor pressure (20C) (MM HG):</b>	<1
<b>Evaporation Rate &amp; Reference:</b>	<1
<b>Freezing point</b>	<0 °C; <32°F
<b>Melting point</b>	<0 °C; <32°F
<b>Density:</b>	0.9800 g/cm3
<b>Vapor density(air=1):</b>	Heavier than air

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<b>Volatile organic content (VOL):</b>	Not determined
<b>L):</b>	
<b>Solubility in water (20 °C):</b>	Reacts rapidly
<b>Note:</b> The above information is not intended for use in preparing product specifications. Contact Capatue Chemical before writing specifications.	

#### 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable
<b>Hazardous Polymerization:</b>	Will not occur
<b>Hazardous thermal decomposition/ combustion products</b>	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.
<b>Incompatibility (Materials to Avoid):</b>	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.
<b>Conditions to avoid :</b>	None known.

#### 11. Toxicological information

<b>Other effects of overexposure:</b>	<p>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.</p>
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#### 12. ECOLOGICAL INFORMATION

<b>Ecotoxicology:</b>	All available ecological data have been taken into account for the development of the hazard and
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precautionary information contained in this safety data sheet.

#### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods:** Disposal should make in accordance with federal, state and local regulations.

#### 14. TRANSPORT INFORMATION

##### 14.1 DOT Road Shipment Information

Proper Shipping Name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
Hazard Technical Name	3-Aminoethylaminopropylmethyldimethoxysilane
Hazard Class	8
UN-No	3267
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-Aminoethylaminopropylmethyldimethoxysilane
Hazard Class	8
UN-No	3267
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-Aminoethylaminopropylmethyldimethoxysilane
Hazard Class	8
UN-No	3267
Packaging Group	II
Hazard Label(s)	CORROSIVE

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)

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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, reactivity hazard

##### **SARA(313)CHEMICALS**

##### **CALIFORNIA PROPOSITION 65**

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

#### **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.