

MATERIAL SAFETY DATA SHEET (MSDS)

Organofunctional Silane SCA-A10E

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

| | | |
|------------|---|--|
| 1.1 | Production | Silane SCA-A10E |
| 1.2 | Generic Description: | Alkoxysilane |
| 1.3 | Physical form: | Liquid |
| 1.4 | Color: | Colorless |
| 1.5 | Odor: | Amine-like odor |
| 1.6 | NFPA Profile: | Health 3 Flammability 1 Instability/Reactivity 0 |
| 1.7 | IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY | |
| | Manufacturer: | Nanjing Capatue Chemical Co., Ltd |
| | Address: | No. 20 JiangJun Avenue, Jiangning Development Zone, Nanjing, Jiangsu Province, P. R. China 211100 |
| | Telephone: | (+86-25)-86371193 Fax: (+86-25) 86371191-0 |
| | 24Hour Emergency Telephone: | (+86-25)-86371192 |
| | Connect with: | Anhuanbu |

2. HAZARDS IDENTIFICATION

| | |
|---|---|
| Classification: | Xn: Harmful R22: Harmful if swallowed. C: Corrosive R34: Cause burns. |
| <u>Acute Effects</u> | |
| Eye: | May cause irreversible damage and burns to the eyes. |
| Skin: | Corrosive. Burns skin upon prolonged contact. |
| Inhalation: | Severely irritating to the respiratory tract. Overexposure by inhalation may cause drowsiness, dizziness, confusion or loss of coordination. |
| Oral: | Aspiration of liquid while vomiting may injure lungs seriously. Corrosive. May cause severe and permanent damage to the mouth, throat and stomach. Harmful by ingestion. Overexposure by ingestion may cause central nervous system depression which may be characterized by drowsiness, dizziness, confusion, loss of coordination, unconsciousness, and with large quantities even death. |
| <u>Prolonged/Repeated Exposure Effects</u> | |
| Skin: | Overexposure by skin absorption may injure the following organ(s): Kidneys. |
| Inhalation: | Overexposure by inhalation may injure the following organ(s): Kidneys. |

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Oral: Overexposure by ingestion may injure the following organ(s): Kidneys.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| CAS Number | Wt % | Component Name | |
|------------|--------|------------------------------|-----------------|
| 919-30-2 | > 99.0 | 3-Aminopropyltriethoxysilane | Xn, R22, C, R34 |

The above components are hazardous as defined in 29 CFR 1910.1200.

4. FIRST AID MEASURES

| | | |
|------------|----------------------------|--|
| 4.1 | Eye: | Immediately flush with water for 15 minutes. |
| 4.2 | Skin: | Remove from skin and wash thoroughly with water for 15 minutes. Get medical attention. |
| 4.3 | Inhalation: | Remove to fresh air. Get immediate medical attention. |
| 4.4 | Oral: | Get immediate medical attention. Only induce vomiting at the instructions of a physician. Never give anything by mouth to an unconscious person. |
| 4.5 | Notes to Physician: | Treat according to person's condition and specifics of exposure. |

5. FIRE FIGHTING MEASURES

| | | |
|------------|------------------------------------|--|
| 5.1 | Flash Point: | > 120 °C |
| 5.2 | Auto ignition Temperature: | Not determined. |
| 5.3 | Flammability Limits in Air: | Not determined. |
| 5.4 | Extinguishing Media: | On large fires use dry chemical, foam or water spray. On small fires use carbon oxide, dry chemical or water spray. Water can be used to cool fire exposed containers. |
| 5.5 | Extinguishing Measures: | Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according |

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| | | |
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| | | to your local emergency plan. Use water spray to keep fire exposed containers cool. |
| 5.6 | Unusual Fire Hazards: | None |
| 5.7 | Hazardous Decomposition Products | Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds, silicon dioxide, nitrogen oxides and formaldehyde. |

6. ACCIDENTAL RELEASE MEASURES

6.1 Containment/Clean up:

Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbant. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See section 8 for Personal Protective Equipment for Spills. Call Capatue Chemical, if additional information is required.

7. HANDLING AND STORAGE

Use with adequate ventilation. Product evolves flammable ethyl alcohol when exposed to water or humid air. Provide ventilation during use to control exposure within Section 8 guidelines or use air-supplied or self-contained breathing apparatus. Avoid eye contact. Avoid skin contact. Do not breathe vapor, mist, dust or fumes. Keep container closed. Do not take internally.

Keep container closed and store away from water or moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

| <u>CAS Number</u> | <u>Component Name</u> | <u>Exposure Limits</u> |
|-------------------|------------------------------|---|
| 919-30-2 | 3-Aminopropyltriethoxysilane | Capatue Chemical guide: TWA 5 ppm, STEL 10 ppm. |

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See ethyl alcohol comments.

Ethyl alcohol forms on contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL and ACGIH TLV-skin: TWA 1000 ppm.

Engineering Controls

Local Ventilation: Recommended.

General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling

Eyes: Use chemical worker's goggles.

Skin: Wash at mealtime and end of shift. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc.). Use chemical worker's protective gloves as minimum and wash skin promptly upon any skin contact.

Suitable Gloves: Butyl Rubber. Neoprene Rubber. Nitrile Rubber.

Inhalation Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposure are within recommended exposure guidelines. IH personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator: General and local exhaust ventilation is recommended to maintain vapor exposure below recommended limits. Where concentration are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA Respirator Regulations (29 CFR 1910.134) and use NIOSH/MHSA approved respirators.

Personal Protective Equipment for Spills

Eyes: Use full face respirator.

Skin: Wash at mealtime and end of shift. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc.). Use chemical worker's protective gloves as minimum and wash skin promptly upon any skin contact.

Inhalation/Suitable Respirator: Respiratory protection recommended. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown or any other circumstances where air purifying respirators may not provide adequate protection.

Precautionary Measures: Avoid eye contact. Avoid skin contact. Do not breathe vapor, mist, dust or fumes. Keep container closed. Do not take internally. Use reasonable care.

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Comments: Product evolves flammable methyl alcohol when exposed to water or humid air. Provide ventilation during use to control exposure within Section 8 guidelines or use air-supplied or self-contained breathing apparatus.

When heated to temperatures above 150 degrees C in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin, and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions. For further information regarding aerosol inhalation toxicity, please refer to the guidance document regarding the use of silicone-based materials in aerosol applications that has been developed by the silicone industry (<http://www.sehsc.com>) or contact the Capatue customer service department.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------------------------|--------------------------|
| Physical Form: | Liquid |
| Color: | Colorless to pale yellow |
| Odor: | Amino-like odor |
| Specific Gravity @ 20°C: | 0.946 |
| Viscosity @ 25°C: | 2 cSt |
| Freezing/Melting Point: | Not determined. |
| Boiling Point: | ≥ 217 °C |
| Vapor Pressure @ 25°C: | Not determined. |
| Vapor Density: | Not determined. |
| Solubility in Water: | Not determined. |
| pH: | Not determined. |
| Volatile Content: | Not determined |
| Flash Point : | > 96 °C |
| Auto ignition Temperature: | Not determined. |
| Flammability Limits in Air: | Not determined. |

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

10. STABILITY AND REACTIVITY

10.1 Chemical Stability: Stable

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| | |
|-----------------------------|--|
| 10.2 Hazardous | Hazardous polymerization will not occur. |
| Polymerization: | None |
| Conditions to Avoid: | None |
| Materials to Avoid: | Oxidizing material can cause a reaction. Water, moisture, or humid air can cause hazardous vapors to form as described in Section 8. |

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Nitrogen oxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Special Hazard Information on Components

No known applicable information.

12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution

Complete information is not yet available.

Environmental Effects

Complete information is not yet available.

Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

Ecotoxicity Classification Criteria

| Hazard Parameters (LC50 or EC50) | High | Medium | Low |
|----------------------------------|-------|------------------|-------|
| Acute Aquatic Toxicity (mg/L) | <=1 | >1 and <=100 | >100 |
| Acute Terrestrial Toxicity | <=100 | >100 and <= 2000 | >2000 |

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

13. DISPOSAL CONSIDERATIONS

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No
State or local laws may impose additional regulatory requirements regarding disposal. Call Capatue Chemical, if additional information is required.

14. TRANSPORT INFORMATION

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14.1 DOT Road Shipment Information

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

Call Capatue Chemical if additional information is required.

15. REGULATORY INFORMATION

Labeling according to EC Directives

| | | |
|-----------------------|------------------|--|
| Symbol(s): | C | Corrosive |
| R-phase(s): | S22 | Harmful if swallowed. |
| | S34 | Cause burns. |
| S-phase(s): | S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| | S36/37/39 | Use suitable 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) |
| TSCA Status: : | | All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of |

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Chemical Substances.

EPA SARA Title III Chemical Listings

Section 302 Extremely Hazardous Substances (40 CFR 355):

None.

Section 304 CERCLA Hazardous Substances (40 CFR 302):

None.

Section 311/312 Hazard Class (40 CFR 370):

Acute: Yes

Chronic : Yes

Fire: No

Pressure: No

Reactive: No

Section 313 Toxic Chemicals (40 CFR 372):

None present or none present in regulated quantities.

Note: Chemicals are listed under the 313 Toxic Chemicals section only if they meet or exceed a reporting threshold.

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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