

SDS per US OSHA Hazard Communication Standard (HazCom) 2012, 29 CFR §1910.1200

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. PRODUCT IDENTIFIER

Product name: Sil-MATRIX® LC
Product Type: Liquid Concentrate
EPA Registration No. 70051-127
Active Ingredient: Potassium silicate
CAS No.: 1312-76-1

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Identified uses: For use on vegetables, fruits, nuts, vine crops, field crops, ornamentals and turf for control of fungal diseases, and control of spider mites, aphids, whiteflies and other insects.
Uses advised against: Any use not listed on the label

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Name: Certis USA LLC
Address: 9145 Guilford Road, Suite 175
Columbia, Maryland 21046
USA
Phone Number: +1 (800) 847-5620
Website: <http://www.CertisUSA.com>

1.4. EMERGENCY TELEPHONE NUMBER

Emergency number: +1 (800) 255-3924

SECTION 2: HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

OSHA Hazard Classification: Not classified
Signal Word: None
Hazard Statements: None
Pictogram: None
Precautionary Statements: P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

2.2. OTHER HAZARDS

Dries to form glass film, which can easily cut skin. Spilled material is very slippery. Can etch glass if not promptly removed.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS #	% w/w
Potassium silicate	1312-76-1	29%

SECTION 4: FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

Eye Contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Hotline Number: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-255-3924 day or night, for emergency medical treatment information.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Alkaline. The toxicity of potassium silicate is dependent on the silica to alkali ratio and on the pH.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Obtain immediate medical attention.

SECTION 5: FIREFIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

Suitable Extinguishing Media: Dry chemical, foam, carbon dioxide, water.

Unsuitable Extinguishing Media: None known.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Hazardous combustion products: None known

5.3. ADVICE FOR FIREFIGHTERS;

Protection of Firefighters: Keep upwind of fire. Wear protective clothing and self-contained breathing apparatus. Fight fire from a safe distance.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For non-emergency personnel: Use personal protection recommended in Section 8.

For emergency responders: Use personal protection recommended in Section 8.

6.2. ENVIRONMENTAL PRECAUTIONS

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.

In the event of an in-transit environmental release or spill of this product, that may endanger the environment, call Chemtel at 1-800-255-3924.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Methods for Containment and Clean-Up: Caution: spillages may be slippery. For small spills, contain the spill and stop the flow. Contain spillages with sand, earth, or any suitable absorbent material. Transfer to a suitable container for disposal or recovery. Seal the container and handle in an approved manner. Reclaim material if possible.

Other Information: Dispose of in accordance with all Federal, State and local procedures.

6.4. REFERENCE TO OTHER SECTIONS

Refer to Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Users should:

- Remove clothing/PPE immediately if pesticide gets inside.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Do not contaminate water, food, or feed by storage or disposal. Store in a cool, dry area. Activity may be impaired by storage at temperatures above 90°F.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

Substance

Potassium silicate (*syn.* Silicic acid, potassium salt)

Occupational Exposure Limits

OSHA PELs: not established

ACGIH TLVs: not established

No occupational limit assigned. An exposure limit of 2 mg/m³ (15 min TWA) is recommended due to structural similarity to potassium hydroxide (UK EH40)

8.2. EXPOSURE CONTROLS

Wear protective equipment to comply with good occupational hygiene practice. Do not eat, drink or smoke at the workplace.

8.2.1. ENGINEERING CONTROLS:

Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.

8.2.2. PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION

None required. Ensure ventilation is adequate.

EYE/FACE PROTECTION

Goggles or face shield when handling undiluted concentrate.

SKIN PROTECTION

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Socks and shoes
- Chemical-resistant gloves
- Goggles or face shield when handling undiluted concentrate

8.2.3. ENVIRONMENTAL EXPOSURE CONTROLS

The primary hazard of potassium silicate is the alkalinity. Avoid release to the environment. For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Liquid, almost colorless
Odor:	Odorless
Odor Threshold:	Not applicable.
pH:	11-12 (alkaline)
Melting Point / Freezing Point:	Not applicable / not available
Initial Boiling Point:	100°C
Boiling Range:	Not determined
Flash Point:	Not applicable
Evaporation Rate:	Not applicable
Flammability (solid, gas):	Not applicable
Lower & Upper Flammability Limits:	Not applicable
Vapor Pressure:	Not applicable
Vapor Density (Air = 1):	Not determined
Density:	1.34 g/cm ³ (20°C), 36.5° Bé, 11.15 lb/gal
Solubility:	Soluble in water
Partition Coefficient (n-octanol/water):	Not determined
Auto-ignition Temperature:	Not applicable
Decomposition Temperature:	Not applicable
Viscosity:	Not determined
Other relevant properties:	Not applicable

9.2. OTHER INFORMATION

Not available.

SECTION 10: STABILITY AND REACTIVITY

10.1. REACTIVITY

See Section 10.3.

10.2. CHEMICAL STABILITY

Stable when handled and stored according to stated provisions.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

When arc-welding vessels containing aqueous solutions of this material, take care to control any explosion risk from hydrogen evolved by electrolysis. Aqueous solutions will react with aluminum, zinc, tin and their alloys evolving

hydrogen gas, which can form an explosive mixture with air. Can react violently if in contact with acids. Can react with sugar residues to form carbon monoxide.

10.4. CONDITIONS TO AVOID

See Section 10.3.

10.5. INCOMPATIBLE MATERIALS

See Section 10.3.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

None known or expected.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. LIKELY ROUTES OF EXPOSURE

Skin and eye contact; inhalation (diluted spray mist).

11.2 SYMPTOMS RELATED TO PHYSICAL, CHEMICAL, AND/OR TOXICOLOGICAL CHARACTERISTICS

All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation.

11.3 EFFECTS (DELAYED/IMMEDIATE/CHRONIC) FROM SHORT- AND LONG-TERM EXPOSURE

See Section 4 for symptoms and acute and delayed effects.

11.4 ACUTE TOXICITY

Acute oral LD₅₀	>5000 mg/kg bw (rat)
Acute dermal LD₅₀	>5000 mg/kg bw (rat)
Acute inhalation LC₅₀	>2.06 g/m ³ (rat)
Skin irritation:	Repeated and/or prolonged skin contact may cause slight irritation.
Eye irritation:	Liquid or mist may cause discomfort and mild irritation
Respiratory or skin sensitization:	Mist is irritant to the respiratory tract. Repeated and/or prolonged skin contact may cause slight irritation. Not a sensitizer.

11.5 OTHER INFORMATION ON ADVERSE HEALTH EFFECTS

Mutagenicity	No evidence of genotoxicity; <i>in vitro/in vivo</i> negative
Carcinogenicity	No structural alerts
	<u>NTP</u> : not listed
	<u>IARC</u> : not listed
	<u>OSHA</u> : not listed

Reproductive/developmental toxicity	No evidence of reproductive or developmental toxicity
STOT - single exposure	Not classified
STOT - repeated exposure	Not classified; NOAEL oral (rat) 159 mg/kg bw/day
Aspiration hazard	Not classified

SECTION 12: ECOLOGICAL INFORMATION

12.1. TOXICITY

Test species	Study Duration	Conditions	Test substance	Results
<u>Fish</u> : <i>Leuciscus idus</i>	48 hr	Not specified	Not specified	LC ₅₀ >146 mg/L
<u>Aquatic invertebrate</u> : <i>Daphnia magna</i>	24 hr	Not specified	Not specified	EC ₅₀ >146 mg/L

12.2. PERSISTENCE AND DEGRADABILITY

Inorganic. Soluble silicates, upon dilution, rapidly depolymerize into molecular species indistinguishable from natural dissolved silica.

12.3. BIOACCUMULATIVE POTENTIAL

Inorganic. The substance has no potential for bioaccumulation.

12.4. MOBILITY IN SOIL

Not applicable.

12.5. OTHER ADVERSE EFFECTS

PBT and vPvB: Not classified as PBT or vPvB.

Alkalinity: The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Storage: Keep pesticide in original container. Keep container tightly closed when not in use. Store product above 40°F. Do not store in aluminum, fiberglass, copper, brass, zinc, or galvanized containers. Protect from excessive heat. Store in a cool, dry place.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

For nonrefillable containers with capacities equal to or less than 5 gallons:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling, if available or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For nonrefillable containers with capacities greater than 5 gallons:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling, if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

SECTION 14: TRANSPORTATION INFORMATION

14.1. UN NUMBER

None. Not applicable.

14.2. UN PROPER SHIPPING NAME

None. Not applicable.

14.3. TRANSPORT HAZARD CLASS(ES)

Not applicable.

14.4. PACKING GROUP

Not applicable.

14.5. ENVIRONMENTAL HAZARDS

None. Not classified as a Marine Pollutant.

14.6. SPECIAL PRECAUTIONS FOR USER

Unsuitable containers: Aluminum.

14.7. TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL73/78 AND THE IBC CODE

Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

EPA/FIFRA:

This product is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticidal chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation. Do not get in eyes or on clothing. Wear goggles or face shield when handling concentrate. After product is diluted in accordance with the directions for use, goggles or face shield are not required. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Wear appropriate personal protective equipment (PPE).

Personal Protective Equipment

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Socks and shoes
- Chemical-resistant gloves
- Goggles or face shield when handling undiluted concentrate

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions exist for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

OSHA:

N/A

TSCA STATUS:

Exempt

CERCLA REPORTABLE QUANTITY:

N/A

SARA TITLE III:

Section 302: N/A

Section 311/312: N/A

Section 313: N/A

RCRA STATUS:

N/A

SECTION 16: OTHER INFORMATION

ABBREVIATIONS

OSHA	US Occupational Health and Safety Administration
EPA	US Environmental Protection Agency
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund)
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TSCA	Toxic Substances Control Act
PEL	Permissible exposure limit
STOT	Specific target organ toxicity
TLV	Threshold limit value
TWA	Time-weighted average
LD ₅₀	Median lethal dose: dose resulting in 50% mortality in the test species
LC ₅₀	Median lethal concentration: concentration resulting in 50% mortality in the test species
EC ₅₀	Median effective concentration: concentration resulting in 50% reduction in algae growth or algae growth rate, or <i>Daphnia</i> immobilization
PPE	Personal protective equipment
PBT	Persistent, bioaccumulative, and toxic
vPvB	Very persistent, very bioaccumulative
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (Marine Pollution 1973/1978),

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