

SAFETY DATA SHEET

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

1.1 Product identifier

Product Name	SILMATRIX™ Potassium silicate solution
Alternative names	EPA registration number: 82100-1 Potassium silicate solution (MR>3.2)
CAS No.	1312-76-1
EINECS No.	215-199-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use(s)	FUNGICIDE/MITICIDE/INSECTICIDE: 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 above.

1.3 Details of the supplier of the safety data sheet

Company Identification	PQ Corporation P.O. Box 840 Valley Forge PA 19482 USA
Telephone:	+1 610-651-4200
E-Mail (competent person)	sds.uk@pqcorp.com

1.4 Emergency telephone number

Emergency Phone No.	+1 800-424-9300
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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification	Not classified as dangerous for supply/use.
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Hazards summary	Alkaline.
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2.2 Label elements

Hazard pictogram(s)	
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Signal word(s)	None.
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Hazard statement(s)	None.
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Precautionary statement(s)	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.
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2.3 Other hazards

	Dries to form glass film, which can easily cut skin. Spilled material is very slippery. Can etch glass if not promptly removed.
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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Regulation (EC) No. 1272/2008 (CLP)

Ingredient(s)	%W/W	CAS No.	EINECS No. / REACH Registration	Hazard symbol(s) and hazard statement(s)
Silicic acid, potassium salt (MR>3.2)	35.5	1312-76-1	215-199-1	H319 : Eye Irrit. 2 ; H315 : Skin Irrit. 2 ; H335 : STOT SE 3 ;
Water	64.5	7732-18-5	231-791-2	

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye Contact	Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.
Skin Contact	Wash affected skin with plenty of water. If symptoms develop, obtain medical attention.
Inhalation	Remove patient from exposure, keep warm and at rest. Obtain medical attention.
Ingestion	Do not induce vomiting. Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain medical attention.

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: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media Compatible with all standard fire fighting techniques.
Unsuitable extinguishing Media None known.

5.2 Special hazards arising from the substance or mixture

Not applicable. Aqueous solution. Non-combustible.

5.3 Advice for fire-fighters

None.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing. Wear eye/face protection.
See Section: 8.2

6.2 Environmental precautions

This product is 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 wash water or rinsate. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination system (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA. In the event of an in-transit environmental release or spill of this product, that may endanger the environment, call 1-800-424-9300.

- 6.3 Methods and materials for containment and cleaning up** Caution - spillages may be slippery. Contain spillages with sand, earth or any suitable adsorbent material. Transfer to a container for disposal or recovery.
- 6.4 Reference to other sections** See Also Section 8.

SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling** Avoid contact with eyes, skin and clothing. Avoid generation of mist. Provide adequate ventilation. Emergency shower and eye wash facilities should be readily available.
See Also Section 8
- 7.2 Conditions for safe storage, including any incompatibilities** 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.
See Also Section 10.
- 7.3 Specific end use(s)** 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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

SUBSTANCE.	Occupational Exposure Limits
Silicic acid, potassium salt	No Occupational Exposure Limit assigned. An exposure limit of 2 mg/m ³ (15 min TWA) is recommended by analogy with 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 work place.
- 8.2.1 Appropriate 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 Protection**
- Respiratory protection In the event of mist or spray exposures: Wear a mask or pesticide respirator jointly approved by the Mine Safety and Health Administration and NIOSH [US EPA].
- Eye/face protection Chemical goggles (EN 166).
- Skin protection Applicators and other handlers must wear long-sleeved shirt and long pants, shoes and socks. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is: Coveralls, Chemical-resistant gloves made of any waterproof material, Shoes and socks.
- 8.2.3 Environmental Exposure Controls** The primary hazard of potassium silicate is the alkalinity. Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 Information on basic physical and chemical properties**
- Appearance Liquid . Almost colourless.
- Odour Odourless.

Odour Threshold (ppm)	Not applicable.
pH (Value)	Alkaline. 11-12
Freezing Point (°C)	No data.
Melting Point (°C)	Not applicable.
Boiling Point (°C)	100
Flash Point (°C) [Closed cup]	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Explosive Limit Ranges	Not applicable.
Vapour Pressure (mm Hg)	Not applicable.
Vapour Density (Air=1)	No data.
Density (g/ml)	1.34 g/cm ³ (20°C), 36.5° Bé, 11.15 lbs/gal
Solubility (Water)	Soluble.
Solubility (Other)	No data.
Partition Coefficient	No data.
Auto Ignition Point (°C)	Not applicable.
Decomposition Temperature (°C)	Not applicable.
Viscosity (mPa. s)	No data.
Explosive properties	Not applicable.
Oxidising Properties	Not applicable.
9.2 Other information	No data.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	See Section: 10.3
10.2 Chemical stability	Stable.
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 aluminium, 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 product(s)	None known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
Acute toxicity	
Ingestion	All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation. Oral LD50 (rat) >5000 mg/kg bw
Inhalation	All symptoms of acute toxicity are due to high alkalinity. Mist is irritant to the respiratory tract. Inhalation LC50 (rat) >2.06 g/m ³
Skin Contact	Repeated and/or prolonged skin contact may cause slight irritation. Dermal LD50 (rat) >5000 mg/kg bw
Eye Contact	Liquid or mist may cause discomfort and mild irritation.
Skin corrosion/irritation	Repeated and/or prolonged skin contact may cause slight irritation.
Serious eye damage/irritation	Liquid or mist may cause discomfort and mild irritation.
Sensitisation	Not sensitising.
Mutagenicity	No evidence of genotoxicity. In vitro/in vivo negative.
Carcinogenicity	No structural alerts.
Reproductive toxicity	No evidence of reproductive toxicity or developmental toxicity.
STOT - single exposure	Not classified
STOT - repeated exposure	Not classified. NOAEL oral (rat) 159 mg/kg bw/d
Aspiration hazard	Not classified
Other information	

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Fish (<i>Leuciscus idus</i>) LC50 (48 hour) >146 mg/l Aquatic invertebrates: (<i>Daphnia magna</i>) EC50 (24 hour) >146 mg/l
12.2 Persistence and degradability	Inorganic. Soluble silicates, upon dilution, rapidly depolymerise 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 Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6 Other adverse effects	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	Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Container Disposal: Do not reuse container. Completely empty container into application equipment. Prior to container disposal, rinse out the container three times with water and empty rinse water into application equipment. Then dispose of empty container in a sanitary landfill in accordance with federal, state, and local waste disposal regulations.
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SECTION 14: TRANSPORT INFORMATION

14.1 UN number	Not applicable.
14.2 Proper Shipping Name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	Not classified as a Marine Pollutant.
14.6 Special precautions for user	Unsuitable containers: Aluminium
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

TSCA Inventory Status: Reported/Included.

AICS Inventory Status: Reported/Included.

DSL/NDSL Inventory Status: Reported/Included.

German Water Hazard Classification VwVwS: Product ID number 1316, WGK class 1 (low hazard to water).

15.2 Chemical Safety Assessment	A Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.
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SECTION 16: OTHER INFORMATION

Data referenced in this eSDS is from company-owned information and from data legitimately accessed by PQ Corporation through membership of Industry Consortia or other agreements. This includes data relating to toxicology, ecotoxicology, DNELs, PNECs and other information in this eSDS and its annex.

This SDS was last reviewed: 07/2015

The following sections contain revisions or new statements: 2

GLOSSARY

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

STOT SE 3 : Specific target organ toxicity — single exposure Category 3

DNEL : Derived No Effect Level

PNEC : Predicted No Effect Concentration

PBT: Persistent, Bioaccumulative and Toxic

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