

# SAFETY DATA SHEET

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

### 1.1 Product identifier

|                     |                                               |
|---------------------|-----------------------------------------------|
| <b>Product Name</b> | <b>AgSil™ 16H Potassium Silicate</b>          |
| Alternative names   | Potassium silicate powder<br>1.6 weight ratio |
| 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)    | Agriculture |
| Uses advised against | None known. |

### 1.3 Details of the supplier of the safety data sheet

|                           |                                                                   |
|---------------------------|-------------------------------------------------------------------|
| Company Identification    | PQ Corporation<br>P.O. Box 840<br>Valley Forge<br>PA 19482<br>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 |
|---------------------|-----------------|

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

|                           |                                                                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>GHS Classification</b> | H314 : Serious eye damage/irritation Category 1<br>Skin corrosion/irritation : Category 1B<br>H335 : STOT - single exposure Category 3 |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

### 2.2 Label elements

Hazard pictogram(s)



Signal word(s)

Danger

Hazard statement(s)

H319: Causes serious eye irritation.  
H335: May cause respiratory irritation.

## Precautionary statement(s)

P261: Avoid breathing dust.  
P262: Do not get in eyes, on skin, or on clothing.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**2.3 Other hazards**

Not classified as PBT or vPvB. Can etch glass if not promptly removed.

## **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 Powder | ~85  | 1312-76-1 | 215-199-1<br>01-2119456888-17   | H319 : Eye Irrit. 2 ;<br>H315 : Skin Irrit. 2 ;<br>H335 : STOT SE 3 ; |
| Water                               | ~15  | 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.  
Irritating to eyes, respiratory system and skin. 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. Inorganic powder or granules. Non-combustible.

**5.3 Advice for fire-fighters** None.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**
**6.2 Environmental precautions**
**6.3 Methods and materials for containment and cleaning up**
**6.4 Reference to other sections**

Wear suitable protective clothing. Wear eye/face protection. An approved dust mask should be worn if dust is generated during handling. See Section: 8.2

Do not allow to enter drains, sewers or watercourses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

Caution - spillages may be slippery. Avoid generation of dust. Sweep or preferably vacuum up and collect in suitable containers for recovery or disposal. Transfer to a container for disposal or recovery.

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 dust. Emergency shower and eye wash facilities should be readily available. See Also Section 8.

**7.2 Conditions for safe storage, including any incompatibilities**

Keep container tightly closed and dry. Unsuitable containers: Aluminium See Also Section 10.

**7.3 Specific end use(s)**

See also Annex to the extended Safety Data Sheet.

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

| SUBSTANCE.                   | Occupational Exposure Limits                                                                                                                                    |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Silicic acid, potassium salt | No Occupational Exposure Limit assigned.<br>An exposure limit of 2 mg/m <sup>3</sup> (15 min TWA) is recommended by analogy with potassium hydroxide (UK EH40). |

**8.2 Exposure controls**
**8.2.1 Appropriate engineering controls**

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

Avoid inhalation of dusts. Wear suitable respiratory protective equipment if working in confined spaces with inadequate ventilation or where there is any risk of the exposure limits being exceeded. Advice on respiratory protective equipment is given in the HSE (Health and Safety Executive) publication HS(G)53. Dust mask: FFP2 (EN 149).

**Eye/face protection**  
**Skin protection**

Chemical goggles (EN 166).  
Wear suitable protective clothing and gloves.  
Plastic or rubber gloves. For example EN374-3, level 6 breakthrough time (>480min).  
Wear suitable overalls. For example EN ISO 13982 (dust), EN 14605 (liquid splashes).

**8.2.3 Environmental Exposure Controls**

The primary hazard of potassium silicate is the alkalinity. Avoid generation of dust. Avoid release to the environment.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties**

|                                |                 |
|--------------------------------|-----------------|
| Appearance                     | Powder. White   |
| Odour                          | Odourless.      |
| Odour Threshold (ppm)          | Not applicable. |
| pH (Value)                     | Alkaline. 11-12 |
| Freezing Point (°C)            | Not applicable. |
| Melting Point (°C)             | > 1000          |
| Boiling Point (°C)             | Not applicable. |
| 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)                 | No data.        |
| 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)             | Not applicable. |
| Explosive properties           | Not applicable. |
| Oxidising Properties           | Not applicable. |
| <b>9.2 Other information</b>   | No data.        |

## **SECTION 10: STABILITY AND REACTIVITY**

|                                                |                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | See Section: 10.3                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>10.2 Chemical stability</b>                 | Stable.                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>10.3 Possibility of hazardous reactions</b> | 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. |
| <b>10.4 Conditions to avoid</b>                | See Section: 10.3                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>10.5 Incompatible materials</b>             | See Section: 10.3                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>10.6 Hazardous decomposition product(s)</b> | None known.                                                                                                                                                                                                                                                                                                                                                                                             |

## **SECTION 11: TOXICOLOGICAL INFORMATION**

### **11.1 Information on toxicological effects**

|                                      |                                                                                                                                                    |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acute toxicity</b>                |                                                                                                                                                    |
| Ingestion                            | All symptoms of acute toxicity are due to high alkalinity. Material will cause irritation. Oral LD50 (rat) >5000 mg/kg bw                          |
| Inhalation                           | Dust is irritant to the respiratory tract. All symptoms of acute toxicity are due to high alkalinity. Inhalation LC50 (rat) >2.06 g/m <sup>3</sup> |
| Skin Contact                         | Dermal LD50 (rat) >5000 mg/kg bw                                                                                                                   |
| Eye Contact                          | Material will cause severe irritation.                                                                                                             |
| <b>Skin corrosion/irritation</b>     | Material will cause severe irritation.                                                                                                             |
| <b>Serious eye damage/irritation</b> | May cause severe damage to eyes.                                                                                                                   |
| <b>Sensitisation</b>                 | Not sensitising.                                                                                                                                   |
| <b>Mutagenicity</b>                  | No evidence of genotoxicity. In vitro/in vivo negative.                                                                                            |
| <b>Carcinogenicity</b>               | No structural alerts.                                                                                                                              |
| <b>Reproductive toxicity</b>         | No evidence of reproductive toxicity or developmental toxicity.                                                                                    |
| <b>STOT - single exposure</b>        | Irritating to respiratory system.                                                                                                                  |
| <b>STOT - repeated exposure</b>      | Not classified. NOAEL oral (rat) 159 mg/kg bw/d                                                                                                    |
| <b>Aspiration hazard</b>             | Not classified                                                                                                                                     |
| <b>Other information</b>             | Not applicable.                                                                                                                                    |

## **SECTION 12: ECOLOGICAL INFORMATION**

|                                                |                                                                                                                                           |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>12.1 Toxicity</b>                           | Fish (Leuciscus idus) LC50 (48 hour) >146 mg/l<br>Aquatic invertebrates: (Daphnia magna) EC50 (24 hour) >146 mg/l                         |
| <b>12.2 Persistence and degradability</b>      | Inorganic. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica. |
| <b>12.3 Bioaccumulative potential</b>          | Inorganic. The substance has no potential for bioaccumulation.                                                                            |
| <b>12.4 Mobility in soil</b>                   | Not applicable.                                                                                                                           |
| <b>12.5 Results of PBT and vPvB assessment</b> | Not classified as PBT or vPvB.                                                                                                            |
| <b>12.6 Other adverse effects</b>              | The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.                                        |

## **SECTION 13: DISPOSAL CONSIDERATIONS**

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>13.1 Waste treatment methods</b> | Discharge of this product to sewage treatment works is dependent on local regulations with regard to pH controls.<br>Dispose of this material and its container to hazardous or special waste collection point.<br>This material is classified as hazardous waste under EC Directive 2008/98/EC. This material is classified as hazardous waste under the Hazardous Waste (England and Wales) Regulations SI 2005 No. 894.<br>Disposal should be in accordance with local, state or national legislation. |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## **SECTION 14: TRANSPORT INFORMATION**

|                                                                                     |                                                                        |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>14.1 UN number</b>                                                               | Not applicable.                                                        |
| <b>14.2 Proper Shipping Name</b>                                                    | Not applicable.                                                        |
| <b>14.3 Transport hazard class(es)</b>                                              | Not applicable.                                                        |
| <b>14.4 Packing group</b>                                                           | Not applicable.                                                        |
| <b>14.5 Environmental hazards</b>                                                   | Not classified as a Marine Pollutant.                                  |
| <b>14.6 Special precautions for user</b>                                            | No special packaging requirements.<br>Unsuitable containers: Aluminium |
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                                                        |

## **SECTION 15: REGULATORY INFORMATION**

|                                                                                                            |                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture</b> | TSCA Inventory Status: Reported/Included.<br>AICS Inventory Status: Reported/Included.<br>DSL/NDSL Inventory Status: Reported/Included.<br>German Water Hazard Classification VwVwS: Product ID number 1316, WGK class 1 (low hazard to water). |
| <b>15.2 Chemical Safety Assessment</b>                                                                     | A Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.                                                                                                                                                   |

## **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: 04/2015

The following sections contain revisions or new statements: No significant changes required to this version at last review.

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GHS Classification         | H314 : Serious eye damage/irritation Category 1<br>Skin corrosion/irritation : Category 1B<br>H335 : STOT - single exposure Category 3                                                                                                                                                                                                                                                                                                                  |
| Signal word(s)             | Danger                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Hazard pictogram(s)        |                                                                                                                                                                                                                                                                                                                                                                        |
| Hazard statement(s)        | H319: Causes serious eye irritation.<br>H335: May cause respiratory irritation.                                                                                                                                                                                                                                                                                                                                                                         |
| Precautionary statement(s) | P261: Avoid breathing dust.<br>P262: Do not get in eyes, on skin, or on clothing.<br>P280: Wear protective gloves/protective clothing/eye protection/face protection.<br>P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.<br>P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

#### GLOSSARY

H319: Causes serious eye irritation.

H315: Causes skin irritation.

H335: May cause respiratory irritation.

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

R36/37/38: Irritating to eyes, respiratory system and skin.

DNEL : Derived No Effect Level

PNEC : Predicted No Effect Concentration

PBT: Persistent, Bioaccumulative and Toxic

EC Classification : According to Directive 67/548/EEC & Directive 1999/45/EC

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