SAFETY DATA SHEET

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

1.1 Product identifier
Product Name: Britesil® H20 Hydrous Sodium Silicate
Alternative names: Hydrous sodium silicate powder, (1.6<MR<=2.6)
CAS No.: 1344-09-8

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified use(s): General purpose industrial chemical for use in a wide range of applications.
- Binding agent
- Corrosion inhibitor
- Dust binding agent
- Flame retardant or fire preventing agent
- Flotation agent
- Stabiliser
- Viscosity control agent
- Intermediate

Uses advised against: None known.

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

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification:
- H318: Serious eye damage/irritation Category 1
- H315: Skin corrosion/irritation Category 2
- H335: STOT - single exposure Category 3

Hazards summary: Alkaline.
Risk of serious damage to eyes.
Irritating to respiratory system and skin. Can etch glass if not promptly removed.

2.2 Label elements
Hazard pictogram(s):

Signal word(s): Danger

Hazard statement(s):
- H318: Causes serious eye damage.
- H315: Causes skin 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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>%W/W</th>
<th>CAS No.</th>
<th>EINECS No. / REACH Registration</th>
<th>Hazard symbol(s) and hazard statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicic acid, sodium salt (1.6&lt;MR&lt;=2.6) Powder</td>
<td>82.5</td>
<td>1344-09-8</td>
<td>215-687-4</td>
<td>H318 : Eye Dam. 1 ; H315 : Skin Irrit. 2 ; H335 : STOT SE 3 ;</td>
</tr>
<tr>
<td>Water</td>
<td>17.5</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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.
- Risk of serious damage to eyes.
- Irritating to respiratory system and skin.
- The toxicity of sodium 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.
6.1 Personal precautions, protective equipment and emergency procedures

- 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

6.2 Environmental precautions

- 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.

6.3 Methods and materials for containment and cleaning up

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

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 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

<table>
<thead>
<tr>
<th>SUBSTANCE.</th>
<th>Occupational Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicic acid, sodium salt</td>
<td>No Occupational Exposure Limit assigned. An exposure limit of 2 mg/m³ (15 min TWA) is recommended by analogy with sodium hydroxide (UK EH40).</td>
</tr>
</tbody>
</table>

8.2 Exposure 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.

8.2.1 Appropriate engineering controls

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).
- 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 sodium 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

Odour
Odour Threshold (ppm)
\(\text{pH (Value)}\)
Freezing Point \(\text{\(^\circ\)}\)°C
Melting Point \(\text{\(^\circ\)}\)°C
Boiling Point \(\text{\(^\circ\)}\)°C
Flash Point \(\text{\(^\circ\)}\)°C [Closed cup]
Evaporation rate
Flammability (solid, gas)
Explosive Limit Ranges
Vapour Pressure (mm Hg)
Vapour Density (Air=1)
Density (g/ml)
Solubility (Water)
Solubility (Other)
Partition Coefficient
Auto Ignition Point \(\text{\(^\circ\)}\)°C
Decomposition Temperature \(\text{\(^\circ\)}\)°C
Viscosity (mPa. s)
Explosive properties
Oxidising Properties
Odourless.
Not applicable.
Alkaline.
Not applicable.
> 1000
Not applicable.
Not applicable.
Not applicable.
Not applicable.
Not applicable.
No data.
Soluble.
No data.
No data.
No data.
Not applicable.
Not applicable.
Not applicable.
No data.
Hydrogen

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)
Hydrogen

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) 3400 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/m³

Skin Contact
Material will cause irritation. Dermal LD50 (rat) >5000 mg/kg bw

Eye Contact
Material will cause severe irritation. Risk of serious damage to eyes.

Skin corrosion/irritation
Irritating to skin.

Serious eye damage/irritation
Irritating to eyes.

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
Irritating to respiratory system.

STOT - repeated exposure
Not classified. NOAEL oral (rat) >159 mg/kg bw/d

Aspiration hazard
Not classified
Other information

Human experience confirms that irritation occurs when sodium silicates get on clothes at the collar, cuffs or other areas where abrasion may occur.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
Fish (Brachydanio rerio) LC50 (96 hour) 1108 mg/l
Aquatic invertebrates: (Daphnia magna) EC50 (48 hour) 1700 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
Discharge of this product to sewage treatment works is dependent on local regulations with regard to pH controls. Disposal should be in accordance with local, state or national legislation.

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
No special packaging requirements. 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.
CERCLA: No CERCLA Reportable Quantity has been established for this material.
SARA TITLE III: Not an Extremely Hazardous Substance under §302.
Not a Toxic Chemical under §313.
Hazard Categories under §§311/312: Acute 3,0,0

15.2 Chemical Safety Assessment
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: 02/2015

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

GHS Classification
H318 : Serious eye damage/irritation Category 1
H315 : Skin corrosion/irritation Category 2
H335 : STOT - single exposure Category 3

Signal word(s)
Danger

Hazard pictogram(s)

Hazard statement(s)
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GLOSSARY
H318: Causes serious eye damage.
H315: Causes skin irritation.
H335: May cause respiratory irritation.
STOT SE 3 : Specific target organ toxicity — single exposure Category 3
R41: Risk of serious damage to eyes.
R37/38: Irritating to respiratory system and skin.
DNEL : Derived No Effect Level
PNEC : Predicted No Effect Concentration
PBT: Persistent, Bioaccumulative and Toxic

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