SAFETY DATA SHEET

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

1.1 Product identifier

Product Name	**Kasil® 1**
Alternative names	Potassium silicate solution
CAS No.	1312-76-1
EINECS No.	215-199-1
REACH Registration No.	

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 ; Flame retardant or fire preventing agent ; Flotation agent ; Stabiliser ; Viscosity control agent
Uses advised against	None known.

1.3 Details of the supplier of the safety data sheet

Company Identification	National Silicates 429 Kipling Ave Toronto, ON M8Z 5C7
Telephone:	416-255-7771
E-mail:	sds.uk@pqcorp.com

1.4 Emergency telephone number

Emergency Phone No.	National Silicates 416-255-7771 USA CHEMTREC 1-800-424-9300 (24 hrs)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification	Eye Irritation Cat 2B

2.2 Label elements

Hazard pictogram(s)	
Signal word(s)	Warning
Hazard statement(s)	Causes eye irritation.
Precautionary statement(s)	Wash hands thoroughly after handling. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	%W/W	CAS No.	EINECS No. / REACH Registration	Hazard symbol(s) and hazard statement(s)
Silicic acid, potassium salt ; Potassium silicate	29.1	1312-76-1	215-199-1	H318 : Eye Dam. 1 ; H315 : Skin Irrit. 2 ; H335 : STOT SE 3 ;
Water	70.9	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.
Risk of serious damage to eyes.
Irritating to 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. 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 — 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. 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	Storage temperature 0-95° C. Loading temperature 45-95 ° C. Provide an adequate bund wall. Unsuitable containers; Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers. See Also Section 10.
7.3 Specific end use(s)	Not available.

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/m3 (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	Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely.
Eye/face protection	Chemical goggles (EN 166).
Skin protection	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 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)	Strongly 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 (Pascal)	

Vapour Density (Air=1)	No data.
Density (g/ml)	1.39 g/cm3 (20°C), 40.4° Bé, 11.56 lbs/gal
Solubility (Water)	Miscible.
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	Gels and generates heat when mixed with acid. May react with ammonium salts resulting in evolution of ammonia gas. Flammable hydrogen gas may be produced on contact with aluminum, tin, lead, and zinc.
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	Mist 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. Risk of serious damage 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	Not classified
STOT - repeated exposure	Not classified. NOAEL oral (rat) 159 mg/kg bw/d
Aspiration hazard	Not classified

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Fish (Leuciscus idus) LC50 (48 hour) >146 mg/l Aquatic invertebrates: (Daphnia magna) 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	Discharge of this product to sewage treatment works is dependent on local regulations with regard to pH controls. Dispose of this material and its container to hazardous or special waste collection point. Disposal should be in accordance with local, state or national legislation. Waste material is classified as a RCRA Hazardous waste if it exhibits the corrosive characteristic (pH greater than or equal to 12.5) .

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.
SARA TITLE III: This material is not a listed Toxic Chemical subject to the reporting requirements of SARA Title III §313 and 40 C.F.R. Part 372. Hazard Categories under SARA Title III §§311/312: Acute.
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.

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: 01/2017
The following sections contain revisions or new statements: 2
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