MSDS MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name:	NA-25S Hydrous sodium silicate powder (1.6<MR<=2.6)
CAS No.	1344-09-8
Manufacturer:	BETONCHEM GmbH
	Bonntrasse 176 50859 Köln
Telephone:	+49 6980921487
In case of emergency call:	+49 6980921487

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical and Common Name	CAS Registry Number	Wt. %	OSHA PEL	ACGIH TLV
Water	7732-18-5	≤18%	Not Established	Not Established
Silicic acid, sodium salt;	1344-09-8	≥82%	Not Established	Not Established

3. HAZARDS IDENTIFICATION

3.1 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

3.2 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.

3.3 Other hazards — Not classified as PBT or vPvB.

4. FIRST AID MEASURES

Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flammable limits: This material is noncombustible.

Extinguishing Media: This material is compatible with all extinguishing media.

Hazards to fire-fighters: See Section 3 for information on hazards when this material is present in the area of a fire.

Fire-fighting equipment: The following protective equipment for fire fighters is recommended when this material is present in the area of a fire: chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots.

6. ACCIDENTAL RELEASE MEASURES

Personal protection: Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots. See section 8.

Environmental Hazards: Sinks and mixes with water. High pH of this material is harmful to aquatic life, see Section 12. Only water will evaporate from a spill of this

material.

Small spill cleanup: Mop up and neutralize liquid, then discharge to sewer in accordance with federal, state and local regulations or permits.

Large spill cleanup: Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material. Stop leak if you can do so without risk. Prevent runoff from entering into storm sewers and ditches which lead to natural waterways. Isolate, dike and store discharged material, if possible. Use sand or earth to contain spilled material. If containment is impossible, neutralize contaminated area and flush with large quantities of water.

CERCLA RQ: There is no CERCLA Reportable Quantity for this material. If a spill goes off site, notification of state and local authorities is recommended.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing spray mist. Keep container closed. Promptly clean residue from closures with cloth dampened with water. Promptly clean up spills.

Storage: Keep containers closed. Store in clean steel or plastic containers. Separate from acids, reactive metals, and ammonium salts. Storage temperature 5-45º C. Loading temperature 10-45 º C. Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Use with adequate ventilation. Keep containers closed. Safety shower and eyewash fountain should be within direct access.

Respiratory protection: Use a NIOSH-approved dust and mist respirator where spray mist occurs.

Skin protection: Wear body-covering protective clothing and gloves.

Eye protection: Wear chemical goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Powder. White..

Color: Colorless.

Odor:	Odorless.
pH:	Alkaline
Specific gravity:	Not applicable
Solubility in water:	Miscible.

10. STABILITY AND REACTIVITY

Stability:	This material is stable under all conditions of use and storage. Conditions to avoid: None.
Materials 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.
Hazardous decomposition products:	Hydrogen.

11. TOXICOLOGICAL INFORMATION

Acute Data:	When tested for primary irritation potential, this material caused moderate irritation to the eyes and slight irritation to the skin. Human experience indicates that irritation occurs when potassium silicates get on clothes at the collar, cuffs or other areas where abrasion may occur. The acute oral toxicity of this product has not been tested. When chemically similar sodium silicates were tested on a 100% solids basis, their single dose acute oral LD50 in rats ranged from 1500 mg/kg to 3200 mg/kg. The acute oral lethality resulted from nonspecific causes.
Subchronic Data:	The subchronic toxicity of this material has not been tested. In a study of rats fed chemically similar sodium silicate in drinking water for three months, at 200, 600 and 1800 ppm, changes were reported in the blood chemistry of some animals, but no specific changes to the organs of the animals due to potassium silicate administration were observed in any of the dosage groups. Another study reported adverse effects to the kidneys of dogs fed potassium silicate in their diet at 2.4g/kg/day for 4 weeks, whereas rats fed the same dosage did not develop any treatment-related effects. Decreased numbers of births and survival to weaning was

reported for rats fed sodium silicate in their drinking water at 600 and 1200 ppm.

Special Studies: The mutagenic potential of this material has not been tested. Chemically similar sodium silicate was not mutagenic to the bacterium E. Coli when tested in a mutagenicity bioassay. There are no known reports of carcinogenicity of potassium silicates. Frequent ingestion over extended periods of time of gram quantities of silicates is associated with the formation kidney stones and other siliceous urinary calculi in humans. Potassium silicate is not listed by IARC, NTP or OSHA as a carcinogen.

12. ECOLOGICAL INFORMATION

Ecotoxicity: The ecotoxicity of potassium silicate has not been tested. The following data is reported for chemically similar sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (Gambusia affnis) of 2320 ppm; a 96 hour median tolerance for water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm.

Environmental Fate: This material is not persistent in aquatic systems, but its high pH when undiluted or unneutralized is acutely harmful to aquatic life. Diluted material rapidly depolymerizes to yield dissolved silica in a form that is indistinguishable from natural dissolved silica. It does not contribute to BOD. This material does not bioaccumulate except in species that use silica as a structural material such as diatoms and siliceous sponges. Where abnormally low natural silica concentrations exist (less than 0.1 ppm), dissolved silica may be a limiting nutrient for diatoms and a few other aquatic algal species. However, the addition of excess dissolved silica over the limiting concentration will not stimulate the growth of diatom populations; their growth rate is independent of silica concentration once the limiting concentration is exceeded. Neither silica nor potassium will appreciably bioconcentrate up the food chain.

Physical/Chemical: Sinks and mixes with water. Only water will evaporate from this material.

13. DISPOSAL CONSIDERATIONS

Classification:	Disposed material is not a RCRA Hazardous waste.
Disposal Method:	Dispose in accordance with federal, state and local regulations and permits.

14. TRANSPORT INFORMATION

DOT UN Status:	This material is not regulated hazardous material for transportation.

15. REGULATORY INFORMATION

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
TSCA:	All ingredients of this material are listed on the TSCA inventory.
FDA:	Potassium silicate is regarded as GRAS (Generally Recognized As Safe) as a corrosion preventative in potable water.

16. OTHER INFORMATION

The information and recommendations are offered for the user's consideration and examination and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use.The information and recommendations contained herein were obtained from sources we believe to be accurate and reliable as of the date revised. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.