



MATERIAL SAFETY DATA SHEET (MSDS)

Sodium Silicate – Industrial Grade

SECTION 1: Identification of the Substance and Supplier

Parameter	Information
Product Name	Sodium Silicate Solution
Common Names	Water Glass, Liquid Glass, Soluble Glass
Chemical Family	Inorganic Alkali Silicates
CAS Number	1344-09-8
EC Number	215-687-4
General Formula	$\text{Na}_2\text{O} \cdot n\text{SiO}_2$
Product Grade	Industrial / Technical
Physical Form	Aqueous Liquid
Reference Concentration	Approximately 40% total solids
Supplier	Basekim
Recommended Uses	Detergents, foundry binders, adhesives, construction chemicals, water treatment
Emergency Contact	To be completed by the responsible supplier

SECTION 2: Hazards Identification

Reference GHS/CLP classification for a representative industrial liquid grade:

Hazard Class	Category
Skin Irritation	Category 2
Serious Eye Damage	Category 1

Signal Word: Danger

GHS Pictogram: GHS05 – Corrosion (serious eye damage).

Hazard Statements:

- H315: Causes skin irritation.
- H318: Causes serious eye damage.



Precautionary Statements:

- P264: Wash exposed skin thoroughly after handling.
- P280: Wear protective gloves, protective clothing, and eye/face protection.
- P302+P352: IF ON SKIN: Wash with plenty of water.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
- P310: Immediately call a POISON CENTER or doctor.
- P332+P313: If skin irritation occurs, get medical advice.
- P362+P364: Take off contaminated clothing and wash it before reuse.

Additional Hazards:

The solution has an alkaline pH. Direct contact can injure eyes and irritate skin. Aerosols or mists may irritate the respiratory tract.

Important: This classification represents a specific type of commercial formulation. Different concentrations and chemical ratios may require different hazard classifications.

SECTION 3: Composition / Information on Ingredients

Component	CAS Number	Reference Content
Sodium Silicate	1344-09-8	Approximately 40%
Water	7732-18-5	Approximately 60%

The exact composition depends on the selected industrial grade.

Commercial products contain varying proportions of silica and sodium oxide. The manufacturer controls these proportions to achieve the required chemical ratio and product concentration.

SECTION 4: First Aid Measures

Eye Contact:

Immediately rinse the eyes with clean, running water for at least 15 minutes. Remove contact lenses if possible. Hold the eyelids open during rinsing and seek immediate medical attention.

Skin Contact:



Remove contaminated clothing and wash affected skin thoroughly with water for at least 15 minutes. Seek medical attention if irritation develops or persists.

Inhalation:

Move the affected person into fresh air. Keep the person comfortable and monitor breathing. Seek medical attention if coughing, breathing difficulties, or respiratory irritation occurs.

Ingestion:

Rinse the mouth carefully with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Contact a poison center or medical professional promptly.

Most Important Symptoms:

Eye injury, skin irritation, respiratory discomfort, and gastrointestinal irritation.

Medical Treatment:

Provide supportive and symptomatic treatment according to the patient's condition.

SECTION 5: Fire-Fighting Measures

Flammability: Nonflammable aqueous solution.

Suitable Extinguishing Media:

Use water spray, carbon dioxide, dry chemical powder, or foam according to the surrounding fire.

Specific Fire Hazards:

The product does not normally burn. However, heating may increase container pressure or cause water evaporation.

Firefighter Protection:

Firefighters should use appropriate protective equipment and self-contained breathing apparatus when necessary.



Flash Point: Not applicable.

Auto-Ignition Temperature: Not applicable to the aqueous solution.

SECTION 6: Accidental Release Measures

Personal Precautions:

- Restrict access to the affected area.
- Avoid direct contact with the spilled material.
- Wear chemical-resistant gloves, goggles, and suitable protective clothing.
- Prevent the generation or inhalation of mist.
- Take precautions against slippery surfaces.

Environmental Precautions:

Prevent uncontrolled discharge into drains, waterways, and soil.

Large releases may increase the pH of receiving water and harm aquatic organisms.

Spill Cleanup:

1. Stop the leak when safe.
2. Contain the spill with suitable barriers.
3. Absorb small releases using sand or other compatible inert materials.
4. Transfer collected material into suitable chemical waste containers.
5. Clean the affected surface under controlled conditions.
6. Dispose of the waste according to applicable regulations.

SECTION 7: Handling and Storage

Safe Handling:

- Avoid direct skin and eye contact.
- Use suitable pumping and transfer systems.
- Avoid inhaling sprays and mists.
- Ensure adequate ventilation.
- Do not eat, drink, or smoke during handling.
- Wash hands after working with the product.

Storage Conditions:



Store in tightly closed, compatible containers in a clean, ventilated area.

Avoid contamination with acids and incompatible substances.

Prevent exposure to unsuitable temperature conditions that may cause freezing, crystallization, or unwanted viscosity changes.

Suitable Containers:

Chemically compatible plastic tanks, drums, IBCs, and other approved industrial storage systems.

Verify the compatibility of tank materials, seals, and transfer equipment before use.

SECTION 8: Exposure Controls / Personal Protection

Occupational Exposure Limits:

No universally applicable occupational exposure limit has been established for all aqueous sodium silicate formulations. Consult local requirements and assess aerosol exposure.

Engineering Controls:

Provide sufficient ventilation and install emergency eyewash stations and safety showers near handling areas.

Personal Protective Equipment:

Protection Type	Recommendation
Eye Protection	Chemical splash goggles
Face Protection	Face shield where splashing may occur
Hand Protection	Compatible chemical-resistant gloves
Skin Protection	Protective clothing and suitable footwear
Respiratory Protection	Appropriate respiratory protection when mist exposure cannot be controlled
Hygiene Measures	Wash after handling and before eating



Select gloves and respiratory equipment according to exposure conditions and the equipment manufacturer's recommendations.

SECTION 9: Physical and Chemical Properties

Property	Representative Value
Physical State	Liquid
Appearance	Clear to slightly hazy, viscous solution
Color	Colorless to pale
Odor	Odorless
Chemical Formula	$\text{Na}_2\text{O} \cdot n\text{SiO}_2$
pH	Typically 11–13
Density at 20°C	Approximately 1.35–1.55 g/cm ³
Boiling Point	Approximately 100°C, concentration-dependent
Freezing Point	Grade-dependent
Flash Point	Not applicable
Flammability	Nonflammable
Water Solubility	Miscible with water
Viscosity	Depends on grade, temperature, and concentration
Total Solids	Approximately 40% for the reference grade
Vapor Pressure	No product-specific data available
Explosive Properties	Not expected to present an explosion hazard under normal conditions

These physical properties represent commercial guidance rather than tested values for a specific shipment.

SECTION 10: Stability and Reactivity

Chemical Stability:

Stable under recommended storage and handling conditions.

Reactivity:

The alkaline solution reacts with acids and may produce heat or silica-rich gels.

Incompatible Materials:



- Strong acids
- Certain reactive metals
- Strong oxidizing substances, depending on formulation and conditions
- Materials incompatible with concentrated alkaline solutions

Conditions to Avoid:

Excessive heating, contamination, unsuitable storage temperatures, and incompatible chemical contact.

Hazardous Decomposition Products:

No significant hazardous decomposition products are expected under normal storage and handling conditions.

Hazardous Polymerization:

Hazardous polymerization does not normally occur.

SECTION 11: Toxicological Information**Likely Routes of Exposure:**

Eye contact, skin contact, inhalation of aerosols, and accidental ingestion.

Eye Effects:

Contact may cause serious eye damage, depending on the formulation.

Skin Effects:

The alkaline solution can irritate the skin. Prolonged or repeated exposure may increase the severity of the effects.

Inhalation Effects:

Mist exposure may cause respiratory irritation, coughing, and discomfort.

Ingestion Effects:

Accidental ingestion may irritate the mouth, throat, and gastrointestinal system.



Sensitization:

No formulation-specific sensitization data available.

Carcinogenicity:

Available information does not identify sodium silicate as an established human carcinogen.

Reproductive Toxicity:

No formulation-specific data available.

Chronic Exposure:

Repeated skin contact may aggravate irritation. Workers should follow appropriate industrial hygiene procedures.

SECTION 12: Ecological Information

Ecotoxicity:

Large releases may increase water alkalinity and adversely affect aquatic organisms.

Persistence and Degradability:

The material consists of inorganic silicate compounds. Conventional biodegradation measures do not directly apply.

Bioaccumulation:

Significant bioaccumulation is not generally expected.

Mobility:

The aqueous product can disperse in water. Environmental behavior depends on dilution, pH, and local chemical conditions.

Environmental Precautions:

Prevent uncontrolled release into natural water systems and wastewater infrastructure.



SECTION 13: Disposal Considerations

Dispose of residues according to applicable local, regional, and national regulations.

Product Waste:

Collect unwanted material in suitable, labeled containers.

Do not release concentrated material directly into drains, soil, or surface waters.

Packaging Waste:

Empty containers may retain alkaline residues. Handle them according to chemical waste procedures.

Do not reuse contaminated containers for drinking water, food, or other unsuitable applications.

Waste Classification:

Determine the applicable waste code and hazardous-waste status according to the actual composition, contamination, and jurisdiction.

SECTION 14: Transport Information

Transport classification depends on the exact product formulation and applicable transport regulations.

Some commercial aqueous grades do not meet dangerous-goods transport classification criteria. Other formulations may qualify as Class 8 corrosive liquids.

Transport Parameter	Status
UN Number	Confirm from grade-specific SDS
Proper Shipping Name	Confirm from grade-specific SDS
Transport Hazard Class	Formulation-dependent
Packing Group	Formulation-dependent
Marine Pollutant Status	Assess for the actual shipment
ADR / RID	Verify before road or rail shipment
IMDG	Verify before sea shipment



IATA	Verify before air shipment
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Important: Do not assign a UN number or declare the product non-dangerous for transport without reviewing its actual classification.

SECTION 15: Regulatory Information

The responsible supplier must evaluate the product under regulations applicable to its manufacturing, distribution, and destination markets.

Relevant frameworks may include:

- Globally Harmonized System (GHS)
- EU REACH and CLP regulations
- US OSHA Hazard Communication Standard
- Applicable national chemical inventory requirements
- Local waste management and environmental regulations
- Applicable dangerous-goods transport rules

Regulatory compliance and product registration status require confirmation for the specific formulation and market.

SECTION 16: Other Information

Document Title: Material Safety Data Sheet – Sodium Silicate

Product Reference: Industrial Liquid Grade

CAS Number: 1344-09-8

Supplier: Basekim

Document Status: Technical draft – pending product-specific verification

Relevant Hazard Statements:

- H315: Causes skin irritation.
- H318: Causes serious eye damage.

Abbreviations:



- MSDS: Material Safety Data Sheet
- SDS: Safety Data Sheet
- GHS: Globally Harmonized System
- CAS: Chemical Abstracts Service
- REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
- CLP: Classification, Labelling and Packaging
- ADR: European Agreement Concerning International Carriage of Dangerous Goods by Road
- IMDG: International Maritime Dangerous Goods Code
- IATA: International Air Transport Association