



TECHNICAL DATA SHEET (TDS)

Sodium Silicate – Industrial Grade (Liquid)

1. Product Identification

Parameter	Description
Product Name	Sodium Silicate
Common Names	Water Glass, Liquid Glass, Soluble Glass
CAS Number	1344-09-8
EC Number	215-687-4
Chemical Formula	$\text{Na}_2\text{O} \cdot n\text{SiO}_2$
Chemical Family	Inorganic Alkali Silicates
Grade	Industrial / Technical
Physical Form	Liquid Solution
Reference Solids Content	Approximately 40%
Supplier	Basekim

2. Technical Specifications – Sodium Silicate

Parameter	Representative Specification
Appearance	Clear to slightly hazy, viscous liquid
Color	Colorless to pale yellow
Odor	Odorless
Silicon Dioxide (SiO_2)	27–30%
Sodium Oxide (Na_2O)	11–14%
Total Solids Content	$40 \pm 2\%$
$\text{SiO}_2/\text{Na}_2\text{O}$ Molar Ratio	Approximately 2.0–2.6
Density at 20°C	$1.40\text{--}1.50 \text{ g/cm}^3$
pH	Typically 11–13
Viscosity at 20°C	Grade-dependent
Water Solubility	Miscible with water
Flash Point	Not applicable
Flammability	Nonflammable
Freezing Behavior	Depends on concentration
Chemical Stability	Stable under recommended storage conditions



Specification note: These are indicative values for a representative 40% industrial solution, not certified Basekim batch specifications. The silica-to-soda ratio, viscosity, density, and concentration must match the selected grade's Certificate of Analysis.

3. Product Description

Sodium Silicate is an alkaline inorganic compound containing sodium oxide and silicon dioxide. Manufacturers commonly supply it as an aqueous solution with varying chemical ratios and concentrations.

The liquid product provides binding performance, alkalinity control, and formulation stability in several industrial processes.

Its physical and chemical properties depend primarily on the silica-to-soda ratio, total solids content, and operating temperature.

Manufacturers should select the appropriate grade according to their application and equipment requirements.

4. Main Industrial Applications

Detergent Manufacturing

Used as an alkaline builder and corrosion inhibitor in industrial cleaning formulations, laundry detergents, and degreasing products.

Foundry Industry

Functions as an inorganic binder in sand molds and cores. Selected systems use carbon dioxide or other curing methods to develop the required strength.

Construction Industry

Supports concrete surface treatment, mineral-based coatings, soil stabilization, and specialized binding applications.

Water Treatment

Selected grades help control corrosion in suitable industrial water systems.

Paper and Adhesive Manufacturing



Serves as a binder in certain cardboard, paperboard, and industrial adhesive formulations.

Ceramics and Refractories

Supports mineral binding and processing in selected ceramic and heat-resistant material formulations.

5. Quality Control and Testing

Manufacturers should evaluate each production batch against an approved product specification.

Test Parameter	Common Evaluation Method
Appearance	Visual Inspection
Total Solids	Gravimetric Analysis
SiO ₂ Content	Validated Chemical Analysis
Na ₂ O Content	Acid-Base Titration
Silica-to-Soda Ratio	Calculation from Oxide Analysis
Density	Hydrometer or Digital Density Meter
pH	Calibrated pH Meter
Viscosity	Rotational Viscometer
Insoluble Matter	Filtration and Gravimetric Analysis

The quality-control laboratory should record the test temperature, analytical methods, and actual results in the batch Certificate of Analysis.

6. Packaging and Supply

Packaging Type	Typical Configuration
Industrial Drums	Suitable chemical-resistant drums
IBC Tanks	Approximately 1,000 L nominal capacity
Bulk Tankers	According to transport and delivery requirements
Tank Containers	Suitable units for bulk international shipment

Confirm package availability, filling weight, and container compatibility with the supplier before ordering.



7. Storage Conditions

- Store in clean, tightly closed, compatible containers.
- Protect from contamination and direct contact with acids.
- Avoid unsuitable freezing or excessive heating conditions.
- Maintain appropriate ventilation in storage and handling areas.
- Keep containers properly labeled.
- Prevent prolonged contact with incompatible metals and materials.
- Use suitable transfer equipment for alkaline solutions.

Shelf Life: Confirm for the selected formulation and packaging. Stability depends on storage temperature, contamination, and concentration.

8. Handling and Safety

The aqueous product has alkaline properties and requires appropriate industrial handling precautions.

Workers should wear chemical-resistant gloves, suitable protective clothing, and splash-resistant eye protection.

Avoid direct contact with skin and eyes.

Refer to the product-specific Material Safety Data Sheet (MSDS/SDS) for detailed first-aid procedures, exposure controls, and emergency measures.

9. Applications and Grade Selection

Different applications require different silica-to-soda ratios.

Lower-ratio formulations generally provide greater alkalinity and suit selected detergent and chemical processing operations.

Higher-ratio formulations offer different silica content and binding properties for specialized industrial applications.

Buyers should confirm the required composition before placing commercial orders.



10. Commercial and Technical Documentation

Industrial buyers should request the following documents when confirming a bulk purchase:

- Technical Data Sheet (TDS)
- Safety Data Sheet (SDS/MSDS)
- Batch Certificate of Analysis (COA)
- Packaging Specifications
- Commercial Invoice and Packing List
- Certificate of Origin, when applicable

11. Technical Disclaimer

This document provides representative technical information for an industrial liquid formulation with approximately 40% total solids.

The stated values serve as guidance and do not represent guaranteed specifications for every grade or shipment.

The supplier must confirm product-specific chemical composition, physical properties, storage recommendations, and quality limits before issuing an approved commercial TDS.

Supplier: Basekim

Product: Sodium Silicate – Industrial Liquid Grade

Document Status: Technical Draft – Pending Grade Verification