



RXSOL

CHEMO PHARMA INTERNATIONAL

Technical Data Sheet (TDS)

RXSOL-19-6605-320
SODIUM SILICATE SOLUTION

DESCRIPTION::

Sodium silicate solution, also known as water glass or liquid glass, is a colorless, viscous, alkaline solution made by reacting silica sand and sodium carbonate at high temperatures. It is a water-soluble inorganic sodium salt with the general formula $\text{Na}_2\text{O} \cdot x\text{SiO}_2$. The solution is known for its adhesive, binding, and film-forming properties, making it useful in various applications such as adhesives, cements, detergents, and drilling fluids.

APPLICATION::

Industrial Applications:

- **Detergents and Soaps:** It acts as a binding agent and helps improve cleaning efficiency.
- **Paper and Pulp:** It's used in deinking processes and as a binder.
- **Water Treatment:** It functions as an iron flocculant and coagulant aid, and also helps with corrosion control and stabilization.
- **Construction:** Sodium silicate is used in cements, refractory materials, and as a binder for various construction components. It also acts as a sealer, waterproofing agent, and corrosion inhibitor.
- **Foundry:** It's used to create molds and cores in casting processes.
- **Adhesives:** It serves as a binder in various applications, including adhesives for paper and other materials.
- **Refractory Applications:** It's used in cements for high-temperature applications like stoves, furnaces, and chimneys.
- **Timber Treatment:** It can preserve wood from insects and offer some flame retardant properties.
- **Soil Stabilization:** It can be used to improve soil strength and load-bearing capacity.
- **Automotive Repair:** It's used to seal leaks in head gaskets and engine blocks.

Other Applications:

- **Food Preservation:** It's been used to preserve eggs and as a desiccant in food packaging.
- **Ceramics:** It's used as a deflocculant in slip preparation and can be applied to pottery for a hardened outer layer.
- **Textiles:** It's used in dyeing processes as a fixative and in textile manufacturing.
- **Art Conservation:** It's used in art restoration and preservation due to its adhesive and consolidating properties.

TECHNICAL SPECIFICATION

- **Appearance** Colorless and opaque
- **Density** 1.36-1.47 grams per cubic centimeter, depending on composition
- **pH** 11-12.5 at 20°C
- **Melting point** 0°C

- Viscosity High, thick, and sticky, depending on concentration
- Solubility Fully soluble in water, but insoluble in alcohols and acids
- Hygroscopicity Absorbs moisture from the air

PRECAUTION::

Personal Protective Equipment (PPE):

- Eye Protection: Wear chemical splash goggles or a face shield to prevent eye contact.
- Hand Protection: Wear chemical-resistant gloves, such as those made of polyvinyl chloride (PVC) or rubber.
- Skin and Body Protection: Wear appropriate protective clothing to prevent skin contact.
- Respiratory Protection: Use a respirator if there's a risk of inhaling dust, fumes, gas, mist, vapors, or spray.

Handling Precautions:

- Ventilation: Use sodium silicate solution only in a well-ventilated area or outdoors.
- Avoid Contact: Do not breathe dust, mist, or vapors.
- Cleanliness: Wash thoroughly with soap and water after handling, and wash contaminated clothing before reuse.
- Emergency Response:

Eye Contact:

- Rinse cautiously with water for several minutes, remove contact lenses if present and easy to do, and continue rinsing. Seek medical advice if irritation persists.

Skin Contact:

- Gently wash with plenty of soap and water. If irritation persists, seek medical advice.

Inhalation:

- Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor.

Spills:

- Soak up spills with inert solids like clay or diatomaceous earth. Transfer to a container for disposal or recovery.

Fire:

- Avoid breathing fire gases or vapors. Evacuate the area and use water spray to cool containers.

Storage:

- Store in a tightly closed container, in a dry place, and keep out of reach of children.
- Environmental Precautions:
- Do not allow spills to enter drains, sewers, or watercourses.
- If spillage enters watercourses or sewers, notify the appropriate authorities.

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