



**LAMBENT**  
**NANO-CHEMICALS**

*As Never Before...*

# LAMBENT NANO-CHEMICALS

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[www.lambentnanochemicals.com](http://www.lambentnanochemicals.com)

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Established in 2014, our manufacturing facilities are located at Morbi, Gujarat, ceramic hub of India. We have a high-tech enterprise specializing in intensive research & development, precision manufacturing, and strategic sales of high-purity colloidal silica solution and innovative tiles polishing liquids.



## **ABOUT US**

### **5+ years professional colloidal silica production factory**

Our main products include colloidal silica solution, tiles polishing Nano-A, High gloss Nano-A, Nano-C antifouling liquids, sodium silicate liquid, sodium silicate glass, sodium silicate powder, Orthosilicic acid. Since inception, our technical team are striving to fulfill the basic requirement of our clients. Our annual production come to more than 6000 tons". Main market includes china, usa, canada, indonesia, thailand, vietnam, south korea as well as some europien countries. Since its establishment, the company has kept close contact with central glass & ceramic research institute, central salt & marine chemicals research institute and other scientific research institutes to continually optimize products and provide personalized customization based on the differences of customer's needs. We have our own manufacturing facilities with professional workers, strict inspection department, and effective services team. Our professional team are dedicated to improve our services and qualities. We can produce customized products for our clients.

## **SODIUM SILICATE**

**in industry**, the various grades of sodium silicate are characterized by based on their SiO<sub>2</sub>:Na<sub>2</sub>O weight ratio (which can be converted to molar ratio by multiplication with 1.032). The ratio can vary between 1:2 and 3.75:1. Grades with ratio below 2.85:1 are termed alkaline. Those with a higher SiO<sub>2</sub>:Na<sub>2</sub>O ratio are described as neutral.

### **We offer three types of sodium silicate**



Sodium silicate liquid



Sodium silicate glass



Sodium silicate powder

### **Properties**

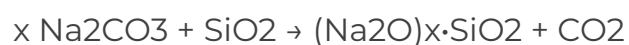
Sodium silicates are colorless glassy or crystalline solids, or white powders. Sodium silicates are stable in neutral and alkaline solutions. In acidic solutions, the silicate ions react with hydrogen ions to form silicic acids, which tend to decompose into hydrated silicon dioxide gel. Heated to drive off the water, the result is a hard translucent substance called silica gel, widely used as a desiccant. It can withstand temperatures up to 1100 °C.

### **Production**

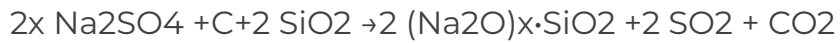
Solutions of sodium silicates can be produced by treating a mixture of silica (usually as quartz sand), caustic soda, and water, with hot steam in a reactor. The overall reaction is

$$2x \text{ NaOH} + \text{ SiO}_2 \rightarrow (\text{Na}_2\text{O})_x \cdot \text{SiO}_2 + x \text{ H}_2\text{O}$$

Sodium silicates can also be obtained by dissolving silica SiO<sub>2</sub> (whose melting point is 1713 °C) in molten sodium carbonate (that melts with decomposition at 851 °C):



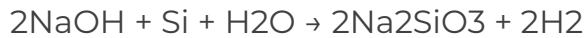
The material can be obtained also from sodium sulfate (melting point 884 °C) with carbon as a reducing agent:



In 1990, 4 million tons of alkali metal silicates were produced.

### **Ferrosilicon**

Sodium silicate may be produced as a part of hydrogen production by dissolving ferrosilicon in an aqueous sodium hydroxide ( $\text{NaOH} \cdot \text{H}_2\text{O}$ ) solution:



### **Bayer process**

Though unprofitable,  $\text{Na}_2\text{SiO}_3$  is a byproduct of Bayer process which is often converted to calcium silicate ( $\text{Ca}_2\text{SiO}_4$ ).

### **Uses**

The main applications of sodium silicates are in detergents, paper industry (as a deinking agent), water treatment, and construction materials. Foundries, refractories and pottery. It is used as a binder of the sand when doing sand casting of all common metals. Sodium silicate is used as a deflocculant in casting slips helping reduce viscosity and the need for large amounts of water to liquidize the clay body. It is also used to create a crackle effect in pottery, usually wheel-thrown.



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## Contact Us

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