



Zhongzhi Chemical

Professional Sodium Silicate Manufacturer Since 2011

Product Brochure - Silicate Chemicals for Industrial Applications Worldwide

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About Us

Shandong Zhongzhi Chemical Technology Co., Ltd. is a professional manufacturer of silicate-based chemical products, established in 2011 in Changyi City, Shandong Province, China. We operate a 30,000 m2 facility with 6+ automated production lines and an annual capacity of 100,000 metric tons. Our products are exported to over 30 countries worldwide.

Established	2011
Factory Area	30,000 m2
Production Lines	6+
Annual Capacity	100,000 Metric Tons
Employees	100+
Export Markets	30+ Countries
Certifications	ISO9001:2015, ISO14001, REACH



Sodium Metasilicate Anhydrous

51% Na₂O. Superior detergency and pH buffering for industrial cleaning. Available in Granular (2 grades) and Powder.

Technical Specifications

SPEC ITEM	SODIUM METASILICATE ANHYDROUS GRANULAR		POWDER
	SUPERIOR GRADE	NORMAL GRADE	-
Na ₂ O%	51.00 +/- 1.00	51.00 +/- 1.00	50.50 +/- 1.00
SiO ₂ % >=	45.00	45.00	45.50 +/- 1.00
Fe% <=	0.0150	0.0200	0.0150
Bulk Density, g/cm ³	1.00 - 1.35	1.00 - 1.35	1.00 - 1.35
Particle Size	18-60mesh >= 93%	18-60mesh >= 93%	>60mesh >= 85%
Whiteness >=	85	80	90
Water Insol. %	0.15	0.20	-
Transparence >=	80	60	-

Performance

Anhydrous sodium metasilicate has bulk density 1.00-1.35 g/mL, melting point 1089C, and MW 122.06. Non-toxic, odorless, readily soluble in water. Excellent cleaning performance with outstanding pH buffering, detergency, emulsifying, and dispersing properties. Ideal STPP replacement.

Applications

- Synthetic detergents - STPP replacement
- Metal cleaning and industrial parts washing
- Food and dairy processing equipment cleaning
- Clay dispersion and deflocculation agents
- Fat and oil emulsifiers; paper deinking
- Ceramics, textiles, printing & dyeing, electroplating
- Coal-water slurry, concrete, petroleum industry



Sodium Metasilicate Pentahydrate

28.7-30% Na₂O. Ideal for detergents, metal cleaning, construction, and oil drilling. Granular and Powder forms.

Technical Specifications

SPEC ITEM	SODIUM METASILICATE PENTAHYDRATE GRANULAR		POWDER	
	SUPERIOR	NORMAL	SUPERIOR	NORMAL
Na ₂ O%	28.70-30.00	28.50-30.00	28.70-30.00	28.50-30.00
SiO ₂ % >=	27.80-29.20	27.50-29.20	27.80-29.20	27.50-29.20
Fe% <=	0.0090	0.0150	0.0150	0.0150
Bulk Density	0.8-1.0	0.8-1.0	0.8-1.0	0.8-1.0
Particle Size	14-60mesh >= 95%	14-60mesh >= 95%	>60mesh >= 15%	>60mesh >= 15%
Whiteness >=	80	75	85	80
Water Insol.% <=	0.05	0.10	0.10	0.10
Transparence >=	85	75	85	75

Performance

Crystalline solid with bulk density 0.8-1.0 g/mL and melting point 72.2C. Readily soluble in water. Strong detergency, excellent pH buffering, good emulsifying and dispersing properties. Provides corrosion protection for light metals.

Applications

- Concentrated laundry powders, liquid detergents
- Metal surface cleaners, rust inhibitors
- Construction: acid-resistant mortar, cement accelerators
- Papermaking: adhesives, waste paper deinking
- Textiles: dyeing auxiliaries, fabric pre-treatment
- Oil & gas drilling: mud viscosity modifiers
- Soap fillers, egg preservatives, molecular sieves
- Ceramic industry: slurry viscosity reduction



Sodium Silicate Liquid

6 grades LGY401-LGY33. Adjustable modulus. Construction, aquaculture, automotive, water treatment.

Technical Specifications

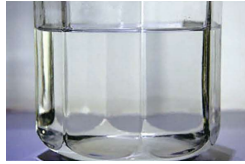
TYPES	Be' (20C)	Na2O% >=	SiO2% >=	WATER INSO% <=	M.R.
LGY401	39.0-40.0	8.30	26.50	0.20	3.20-3.40
LGY402	39.0-40.0	8.30	26.50	0.80	3.20-3.40
LGY403	39.0-40.0	8.20	26.00	-	3.20-3.40
LGY501	50.0-51.0	14.20	28.00	0.20	1.90-2.20
LGY502	50.0-51.0	12.80	29.40	0.20	2.20-2.50
LGY33	32.5-35.0	10.50	14.50	0.10	1.30-1.50

Performance

Clear, viscous aqueous solution with excellent binding, adhesive, and film-forming properties. Available in multiple grades with varying modulus and concentration. One of the most versatile industrial chemicals.

Applications

- Metal surface protection: exhaust system coatings
- Automotive: engine component sealing
- Aquaculture: algae growth medium
- Food preservation: egg shelf life extension
- Wood treatment: insect resistance, flame retardancy
- Concrete: accelerated setting, improved strength
- Construction: rapid-setting cement, waterproofing
- Wastewater treatment: coagulant aid
- Detergent and textile auxiliaries



Water-Soluble Silicon-Based Flame Retardant

Non-toxic, anti-dripping, smoke suppression. LOI \geq 29%. For textiles, plastics, cables.

Technical Specifications

Spec Item	New Silicon-Based Flame Retardant	Powder	
		Premium	Grade I
Appearance	Colorless to light yellow transparent liquid or white solid powder		
SiO ₂ , %	≥ 15.0	≥ 15.0	≥ 15.0
Heavy Metals & PBBs, mg/kg	≤ 5.0	≤ 5.0	≤ 5.0
LOI (Textile), %	≥ 29.0	≥ 29.0	≥ 29.0

Performance

New-generation water-soluble silicon-based flame retardant. Highly effective, non-toxic, anti-dripping, and smoke-suppressing. Enhances material processability, heat resistance, and mechanical properties.

Applications

- Flame-retardant textiles and fabrics
- Polymer and plastic materials
- Electrical wires and power cables
- Engineering plastics
- Fire-resistant thermal insulation
- Fire-retardant coatings and paints
- Electronics and electrical components
- Automotive and aerospace fireproof products



Sodium Orthosilicate

58.5% Na₂O. Strongest alkaline silicate for heavy-duty cleaning, metal treatment, ceramics.

Technical Specifications

SPEC	Na ₂ O% >=	SiO ₂ % >=	Fe% <=	Whiteness% >=	BULK DENSITY g/cm ³ >=
Value	58.50	27.50	0.0100	80.00	0.90

Performance

Non-toxic, odorless white granular or powder. Readily soluble in water, insoluble in alcohol and acid. Strongly alkaline aqueous solution with excellent detergency, emulsifying, dispersing, wetting, and penetrating properties.

Applications

- Industrial and household cleaning agents
- Metal surface treatment chemicals
- Ceramic grinding aids
- Refractory material additives
- Textile dyeing and finishing auxiliaries
- Paper deinking agents
- Inorganic binders and soap fillers
- Acid-resistant concrete
- Soil stabilization for building foundations



Instant Soluble Powdered Sodium Silicate

LGS-20 and LGS-30 grades. Rapid cold-water dissolution. Automated batching.

Technical Specifications

SPEC ITEM	LGS-20		LGS-30	
	SUPERIOR	NORMAL	SUPERIOR	NORMAL
(Na ₂ O+SiO ₂)% >=	77.00	76.00	80.00	79.00
Bulk Den. g/cm ³	0.45	0.30	0.60	0.45
Whiteness% >=	90	80	90	80
Soluble Rate (60C 1%) <=	60	100	-	-
Fe% <=	0.0150	-	0.0150	-
Water Insol.% <=	0.05	0.10	0.10	0.10
M.R.	1.90-2.10	1.90-2.10	2.90-3.10	2.90-3.10

Performance

White, free-flowing powder with excellent cold resistance and uniformity. Rapidly dissolves in water at room temperature. Particularly suitable for mechanized and automated production. Ideal for high-concentration liquid formulations.

Applications

- Metallurgy, power, petrochemical, building materials
- Detergent builders, degreasers, corrosion inhibitors
- Refractory material binders and preservatives
- Acid-resistant cement and mortar
- Fine ceramics and precision casting
- Oil drilling and underground cementing



Potassium Silicate

Three grades with moduli 3.3-4.9. Binder for refractories, welding rods, coatings.

Technical Specifications

SPEC ITEM	POTASSIUM SILICATE		
	GRADE A	GRADE B	GRADE C
SiO ₂ %	22.0-23.0	19.0-19.8	16.0-16.8
K ₂ O%	9.8-10.9	7.4-8.2	5.1-5.6
Solid Content%	31.8-33.9	26.4-28.0	21.1-22.4
Density g/cm ³	1.28-1.33	1.23-1.26	1.16-1.18
pH Value	12.9-13.2	12.0-12.3	11.6-12.0
Modulus	3.3-3.5	3.8-4.0	4.7-4.9
Sulfur%	<= 0.01	<= 0.01	<= 0.01
Phosphorus%	<= 0.01	<= 0.01	<= 0.01
Water Insol.%	<= 0.05	<= 0.05	<= 0.05

Performance

Readily soluble in water, decomposes in acidic solutions to form silica. Excellent adhesive properties depending on modulus, concentration, and temperature. Outstanding adhesion, chemical stability, and alkaline characteristics.

Applications

- Binder for refractory materials
- Oilfield drilling fluid additive
- Welding electrode and rod manufacturing
- Vat dyes and flame-retardant formulations
- Curing agents for inorganic materials
- Phosphor coating formulations for displays
- Inorganic coatings, paints, soap fillers
- Pharmaceutical manufacturing



Lithium Silicate

Deep-penetration concrete densifier. Superior hardness, abrasion resistance, UV stability.

Technical Specifications

Lithium Silicate	
Chemical Name	Lithium Silicate (Lithium Water Glass)
Molecular Formula	$\text{Li}_2\text{O} \cdot n\text{SiO}_2$
Appearance	Colorless to slightly yellow transparent liquid (aqueous solution)
Key Performance	Excellent permeability, deep penetration, fast reaction, uniform film formation

Performance

Alkali metal silicate aqueous solution with excellent penetration, reactivity, and chemical stability. Reacts with free calcium ions to form stable C-S-H gel. Reduces surface dusting, chalking, and cracking of concrete. Excellent UV, water, and chemical resistance.

Applications

- Concrete densifiers and sealers
- Floor hardeners
- Concrete curing compounds
- Inorganic and silicate-based coatings
- Building protection materials
- Refractory materials and precision casting
- Ceramic manufacturing and electronic materials
- Specialty inorganic binders



Sodium Silicate

Liquid and solid forms. The most versatile industrial silicate for 20+ industries.

Technical Specifications

Sodium Silicate (Water Glass)	
Alias	Water Glass, Soluble Glass
Molecular Formula	$\text{Na}_2\text{O} \cdot m\text{SiO}_2$
Liquid Appearance	Colorless to light yellow or bluish-gray viscous fluid
Solid Appearance	Light or light blue transparent glass-like blocks or granules

Performance

Versatile inorganic silicate with excellent alkalinity, adhesion, chemical stability, and water solubility. Properties vary with modulus, concentration, and temperature. Customizable specifications for diverse applications.

Applications

- Detergents: laundry powders, soaps, water softeners
- Textiles: dyeing, bleaching, sizing
- Machinery: foundry, grinding wheels, corrosion protection
- Construction: rapid-setting cement, waterproofing
- Agriculture: silicon fertilizers
- Petroleum: catalytic cracking catalysts
- Ceramics and mining applications
- Food preservatives and refractories

Ordering Information

MOQ	1 Metric Ton
Lead Time	Approx. 2 weeks after order confirmation
OEM Service	Available - customized packaging upon request
Packaging	25 kg / 500 kg / 1000 kg bags; custom available
Loading Port	Qingdao Port, China
Storage	Cool, dry, well-ventilated place. Keep sealed.
Shelf Life	24 months under recommended conditions
Payment Terms	Flexible, negotiable

Contact Us

We welcome inquiries from distributors, industrial buyers, and OEM partners worldwide.

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