WELL-T
惠尔特科技

WELL-T COLLOIDAL SILICA

DISPERSIONS OF NANO SILICA PARTICLES

YOUR DEDICATED COLLOIDAL SILICA PARTNER SINCE 1998

COLLOIDAL SILICA

Two Natural Components, One Powerful Dispersion

Since 1998, Well-T's mission has always been to transform two natural components – silica and water – into a versatile, high-performance additive, making it an essential solution across industries.

Simple Ingredients, Low VOC

Our colloidal silica is made from two natural components – sodium silicate ("sand") and water – ensuring a low-VOC, cleaner, and greener formulation that aligns better with today's environmental standards.

Small Particle, Big Advantages

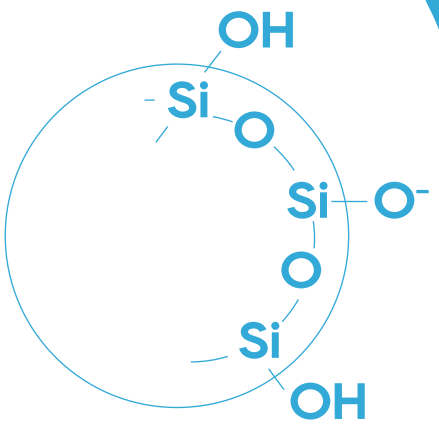
Well-T transforms the simple ingredients into a nanoparticle material with high surface area, exceptional stability, and controlled particle size distribution – making it an effective chemical intermediary.

A Functional Additive for Every Market

From traditional industries like foundry and paper to cutting-edge applications such as CMP and ceramic coatings, Well-T's colloidal silica optimizes performance across diverse industries.

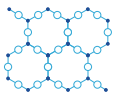
KEY FUNCTIONALITIES

Versatile Functional Additive Across Industries



Binder ›

Creates a rigid, **high-strength** silica structure that enhances **adhesion** and **thermal resistance**, making it ideal for demanding industrial binding applications.



Key Markets:

Investment Casting | Refractories | Petrochemical Catalysts | Silicate Paints | Concrete

Surface Polishing ›

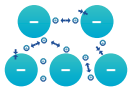
Acts as a **precision abrasive** for ultra-smooth, defect-free finishes. **Uniform particle size** ensures consistency, while chemical interactions enable finer control.

Key Markets:

CMP | Precision Metals | Optical & Ceramic Components

Retention, Drainage & Flocculation ›

With **high surface area** and **charge properties**, Well-T's colloidal silica optimizes drainage, improves filler distribution, and aids contaminant removal.



Key Markets:

Pulp & Paper | Water Treatment

Surface Functionalization ›

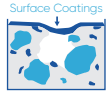
Customizable with **silane groups, charge modifications**, and **polymer** coatings for enhanced reactivity, bonding, and dispersion—expanding silica's capabilities.

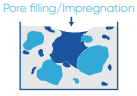
Key Markets:

Adhesives & Coatings | Hydrophobic & Hydrophilic Treatments

Surface Treatment ›

Enhances **scratch resistance, water repellency**, and adhesion by forming a thin silica film or interacting with coatings. Fills surface pores for improved gloss and smoothness.





Key Markets:

Ceramic Tiles | Architectural Coatings | Concrete Flooring | Paper Coats | Textiles

UNLOCKING KEY FUNCTIONALITIES FOR YOUR INDUSTRY

Coatings

Our products serve as functional fillers, additives, and binders to improve adhesion, durability, and surface properties in various coating formulations.

Applications:
Silicate Paints, Acrylic Paints, Industrial Coatings, Ceramic Coatings, Pigments Dispersion

Products
SG-1430
SG-1630
HS-1430
HS-40
HSD Series
SW Series

Concrete & Cement

Our products improve workability, early strength, and durability as additives. They are also used in curing aids and densifier composition for long term performance.

Applications:
Shotcrete, Self-Leveling Concrete, Oilfield Cementing, High Performance Concrete

Products
HS-615
HS-830
HSD-3550
HSD-10050

Investment Casting

Our products act as binders during shell formation in investment casting, which ensures exceptional dimensional accuracy in cast parts.

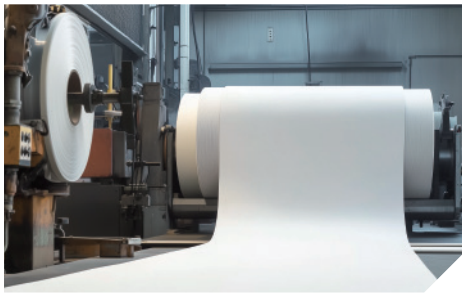
Applications:
Turbines, Valves, Aerospace Parts, Automotive Parts
Medical Implants

Products
HS-830
HS-1430
SKP-G30
SKP-27
SKP-K1

Paper

Our products improve fiber retention, enhance dewatering efficiency and optimize paper formation, which improves process efficiency on the wet end of papermaking.

Applications:
Print Paper, Recycled Paper, Kraft Paper



Products
HS-308
HS-515

Petrochemicals

Our products act as binders for zeolites and molecular sieves, ensuring thermal stability, controlled porosity, and high adsorption capacity.

Applications:
Zeolites, Molecular Sieves, Catalysts

Products

- STN-30
- HSN-30
- HSA Series

Refractory Materials

Our products act as binders to improve workability, setting properties, and durability in high-heat environments, increasing compressive strengths and thermal resistance.

Applications:
Monolithic, Vacuum-Formed Shapes, Precast Shapes, Ceramic Fiber

Products

- HS-40
- HSN-40
- HSD-10050
- HSA Series

Surface Polishing

Our products act as abrasives in precision polishing, enabling controlled material removal and surface refinement. They help achieve ultra-smooth, defect-free surfaces with excellent consistency and stability.

Applications:
Silicon Wafers, Semiconductors, Metals, Sapphire, Precision Substrates

Products

- HSD-10050
- HSD Series

Surface Treatment

Our products help enhance gloss and stain resistance through pore-filling treatments, creating a smoother surface They also improve water repellency through hydrophobic surface modification.

Applications:
Ceramic Tiles Gloss, Industrial Floor Repair, Concrete Curing and Densifier, Architectural Coatings

Products

- HS-1430
- HSN-30
- HSD-10050
- SG-1430
- SG-1630

Other Applications

More industries are discovering the potential of colloidal silica, unlocking new applications and performance benefits – with even more to come. Our products are also used in the following markets:

01 Fire-Resistant Glass

02 Lead-Acid Battery

03 Papers Coating

04 Textiles

05 Water Treatment

Consult with us for more detailed product and application information.

LEADING TECHNOLOGY, PROVEN PERFORMANCE

With nearly 30 years of experience in colloidal silica, Well-T delivers cutting-edge technology and solutions for every industry. We push the boundaries of innovation, developing solutions engineered for each industry that enhance efficiency and performance.

Tailored for Every Industry

Smaller Particles, Bigger Advantages

With an **ultra-small** 3-5 nm particle size, **HS-515** enhances reactivity, optimizing drainage, retention, and efficiency in **pulp & paper** and **wastewater treatment**.

Over 700 m^2/g of surface area.

Higher Solids, Better Control

Our **HSD Series**, with larger particle size, is designed for applications such as **surface polishing** and **CMP** that require stability, **controlled reactivity**, and higher solids.

50-55% solid weight.

Lower Sodium, Higher Heat Stability

Excess sodium weakens material integrity at high temperatures. Our **HSN & HSA Series** minimizes sodium, ensuring **thermal stability in refractories** and **ceramics**.

<=0.1% Na_2O% or lower.

Exerting Key Control on Metal Impurities

Designed for **investment casting** and **catalyst supports**, our **SKP / STN** Series tightly **control impurities** such as Fe^{3+} and Al^{3+} that can critically degrade material performance.

Controlled levels of Fe^{3+} and Al^{3+}

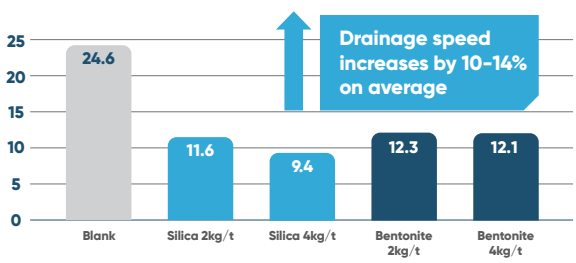
CASE STUDY

Ultra high surface area drives improved drainage in paper & pulp

The high surface area of HS-515 from Well-T is proven to increase drainage speed by 10–14% on average by tests, compared to the traditional bentonite system on the wet end.

Drainage Performance:HS-515 vs. Bentonite

Drainage Time (s/400ml)



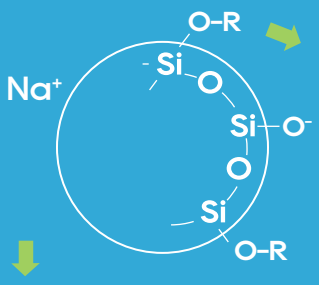
Source: Internal testing. Actual results may vary subject to different test conditions.

Surface Engineering Technology

Well-T's capabilities go beyond the traditional making of silica particles. Our polymer enhancement and silane modification technologies unlock superior adhesion, stability, and functionality in key applications such as coatings, surface treatments, and investment casting.

Silane-Modified Silica Particles

Typical silica particles are hydrophilic with reactive hydroxyl groups, which can cause compatibility issues and weak adhesion in high-solids systems. They also do not naturally form a film.



What we did

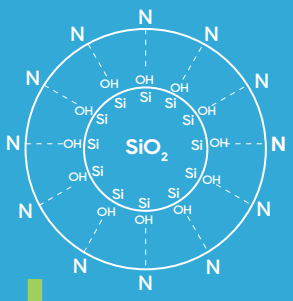
In our SG Series, Well-T introduces functional silane groups on the surface. The epoxy silane promotes better cross-linking with binders, resins, and substrates.

The result?

Improved compatibility and dispersion, better adhesion, and stronger bonding with binders and substrates in coatings.

Polymer-Enhanced Silica Particles

Typical silica binders in investment casting slurries can be affected by impurities and uncontrolled reactions, leading to inconsistent shell strength and defects. They also struggle to maintain purity and stability in demanding conditions.



What we did

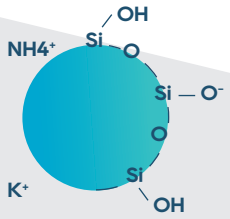
For our SKP-27 & SKP-K1 products, Well-T applies a protective polymer layer to the silica surface, isolating contaminants and preventing unwanted interactions in the slurry.

The result?

Improved slurry stability, enhanced shell strength, and a cleaner casting process with fewer defects and superior final cast quality.

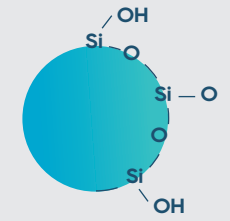
Full Suite of Solutions

HSA/K Series: Non Sodium Stabilized



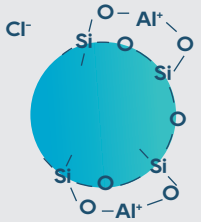
Ammonium or Potassium stabilized silica particles with minimal sodium.

SW Series: Deionized Modified



Acidic colloidal silica for systems where low pH is desired.

SC Series: Cationic Particles



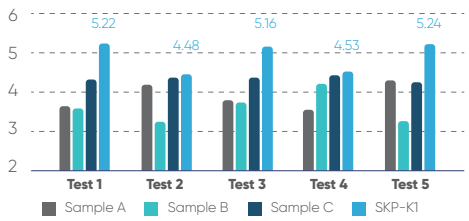
Cationic colloidal silica for enhanced interaction with negatively charged surfaces.

CASE STUDY

Surface engineering enables rapid shell formation in investment casting

SKP-K1, a polymer-enhanced, silane-modified binder, consistently outperformed standard silica by achieving higher strength, resulting in shorter dipping intervals and faster shell formation across tests.

Green Strengths (mPa) of Ceramic Shells Before Firing



25% rel. Increase in green strengths

Source: Internal testing. Actual results may vary subject to different test conditions.

GLOBAL STANDARDS ENGINEERED FOR EXCELLENCE

Product quality is paramount to us. With our experience, technology, and scale, our products are developed to meet even the highest global standards.

Introducing Well-T's Product Family

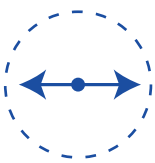
Series	Definition	Features	Series	Definition	Features
HS	Sodium-stabilized, alkaline small particle sols	Versatile, high surface area, stable	SG	Silane-modified sols	Film formation adhesion to substrates compatible with high-solid system
HSD	Sodium-stabilized, alkaline large particle sols	Controlled reactivity, high solid content, controlled removal rate for polishing	SW & SC	Low pH, deionized or cationic sols	Compatible with low-pH systems
HSN	Low-sodium, alkaline sols	Enhanced thermal stability for high-heat applications	SKP	Industry-specific for investment casting	Improved slurry stability, better green strength, fewer casting defects
HSA & HSK	Non-sodium stabilized alkaline sols	Suitable for applications requiring minimal sodium content	STN	Industry-specific for petrochemicals/catalysts	Low iron, low aluminum prevents catalyst poisoning

Automatic production lines

Rigorous quality control protocols

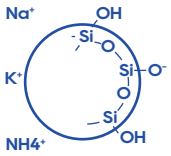
Customized Specs at Lightning Speed

Well-T goes beyond standard offerings, providing custom colloidal silica solutions tailored to your exact needs by optimizing particle size, pH, viscosity, solids, sodium levels, and distribution for maximum performance.



3-180nm

SiO_2 15-55%



Stabilizing Ions

02	03	04	05	06	07	08	09	10	11	12

2-12 pH value

Featured Products

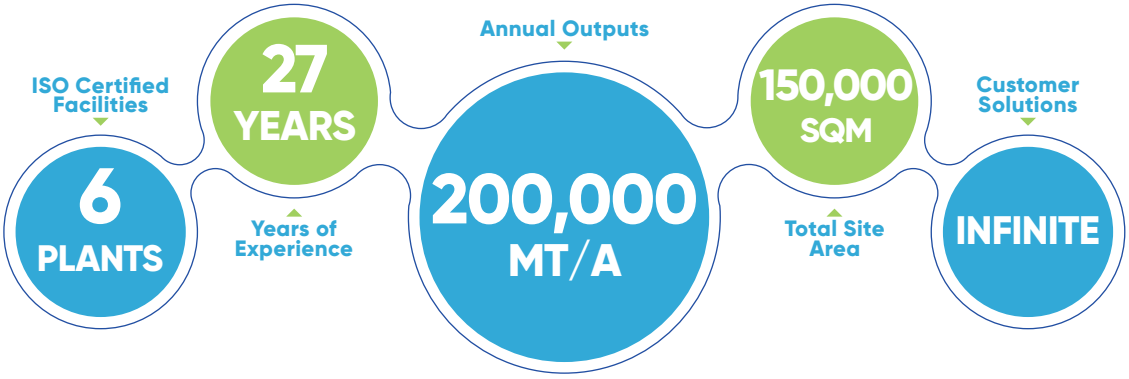
	Product	Density (g/cm^3)	Particle Size (nm)	SiO_2 (by wt%)	Na_2O (by wt%)	pH	Viscoity (mm^2/s)	Surface Area (m^2/g)	Appearance
HS Series Small Particle Sodium Stabilized Sols (1)	HS-308	1.05	2-3	7-8	≤1.0	10.0-11.5	< 5	900	Clear
	HS-515	1.10	3-5	13-15	≤1.0	10.0-11.5	<5	700	Clear
	HS-830	1.20	8-10	29-31	≤0.5	9.5-10.5	4-8	300	Translucent
	HS-1430	1.20	10-16	29-31	≤0.5	9.0-10.5	3-8	250	Translucent
	HS-40	1.30	10-16	39-41	≤0.5	9.0-10.5	8-12	250	Translucent
HSD Series Large Particle Sols (2)	HSD-3550	1.38	35-45	49-51	≤0.5	9.0-10.5	<=8	80	Milky White
	HSD-6050	1.38	60-70	49-51	≤0.4	9.0-10.0	≤6.5	40	Milky White
	HSD-8050	1.38	70-90	49-51	≤0.4	9.0-10.5	≤6.5	35	Milky White
	HSD-10050	1.38	90-110	49-51	≤0.3	9.0-10.5	≤7	30	Milky White
	HSD-10055	1.38	90-110	54-56	≤0.3	9.0-10.5	≤12	30	Milky White
SG Series Silane Modified Sols	SG-1430	1.19	9-12	28-30	≤0.5	8.5-10.5	≤10	--	Translucent
	SG-1630	1.19	12-20	28-30	≤0.5	8.5-10.5	≤10	--	Milky White
	SG-40	1.28	12-20	38-40	≤0.5	8.5-10.5	8-12	--	Milky White
HSN Seires Low Sodium Sols	HSN-30	1.20	10-16	29-31	≤0.15	9.0-10.5	3-8	250	Translucent
	HSN-40	1.30	10-16	39-41	≤0.15	9.0-10.5	8-12	250	Translucent
HSA & HSK Series Ammonium or Potassium Stabilized Sols	HSA-30	1.20	10-16	29-31	≤0.05	9.0-10.5	3-8	250	Translucent
	HSA-40	1.30	10-16	39-41	≤0.05	9.0-10.5	8-12	250	Translucent
	HSA-10040	1.30	70-90	40-41	≤0.1	9.0-9.5	≤6.5	30	Milky White
	HSK-30	1.20	10-16	29-31	--	9.0-10.5	3-8	250	Translucent
SKP & STN Series Casting & Catalysts Specific Sols (3)	SKP-G30	1.20	10-13	29-31	≤0.5	10.5-11.0	<4	250	Translucent
	SKP-27	1.19	10-15	27-29	≤0.6	10.0-10.8	<6	--	Opalescent
	SKP-K1	1.19	13-20	26-29	≤0.6	10.0-10.5	<8	--	Milky White
	STN-30	1.20	10-20	29-31	≤0.5	9.0-10.5	<8	200	Translucent
SW, SC & SZ Series Low pH Deionized & Cationic Sols (4)	SC-30	1.20	15-20	26-28	≤0.06	2.0-4.0	≤10	200	Translucent
	SW-3030	1.20	30-40	26-28	≤0.06	2.0-4.0	≤10	85	Translucent
	SZ-30	1.20	10-16	29-31	≤0.1	6.0 - 8.0	3-8	250	Translucent
	SW-30	1.20	15-20	26-28	≤0.06	2.0-4.0	≤10	200	Translucent

(1) Custom specifications supported for HS Series, available in three purity levels based on raw materials.
(2) Custom specifications supported for HSD Series, available in two purity levels based on raw materials. Both poly- and mono- dispersions available.
(3) SKP Series contains additives like emulsions and polymers, designed for investment casting applications.
(4) SW is uncharged deionized acidic silica, while SC is cationic-modified with a positive charge. SZ is near neutral silica.

YOUR DEDICATED COLLOIDAL SILICA PARTNER SINCE 1998

With nearly 30 years of expertise in colloidal silica, Well-T delivers cutting-edge nano-technology and engineered solutions for every industry. We push the boundaries of silica innovation, developing high-performance colloidal silica that enhances efficiency and reliability across diverse applications.

Well-T's Leadership in Numbers



Excellence & Precision in Every Step

Development

Processing

Production

Storage & QC

Packaging

OUR MISSION:
FROM CHINA, FOR THE WORLD

Well-T's Footprints

- MANUFACTURING PLANTS
- R&D CENTER
- DISTRIBUTION CENTER

What's your colloidal silica challenge today?

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GUANGDONG WELL-NANOTECH CO., LTD. ("WELL-T") IS A GLOBAL LEADER IN THE DEVELOPMENT AND MANUFACTURING OF COLLOIDAL SILICA. FOUNDED IN 1998, WELL-T HAS GROWN TO EMPLOY 300 PROFESSIONALS ACROSS TEN LOCATIONS, SUPPLYING UP TO 200,000 METRIC TONS OF COLLOIDAL SILICA ANNUALLY THROUGH A ROBUST LOCAL AND GLOBAL DISTRIBUTION NETWORK. WELL-T IS COMMITTED TO DELIVERING HIGH-QUALITY SOLUTIONS, CONTINUOUS INNOVATION, AND UNPARALLELED TECHNICAL SUPPORT TO MEET THE EVOLVING NEEDS OF INDUSTRIES WORLDWIDE.

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