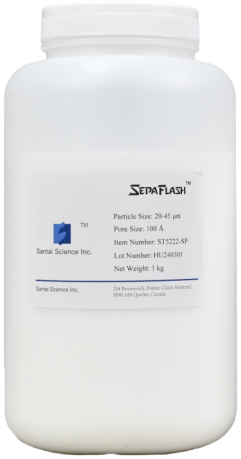
SepaFlash™ Bulk Silica Gels

Available in both irregular and spherical forms, with bare or bonded options.



Simplify your purification, maximize your efficiency!

Santai Science Inc.

Introduction

Introduction

Welcome to “SepaFlash™ Bulk Silica Gels”, your comprehensive guide to Santai Science’s advanced chromatography technologies. This brochure showcases our innovative bulk silica gels for chromatography designed to enhance purification efficiency and reliability.

Table of Contents

Explore the Santai Science Portfolio

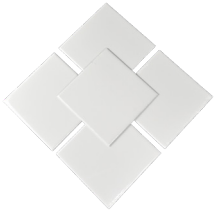
Explore the Santai Science Portfolio

At Santai Science, we take pride in offering a diverse portfolio of advanced separation and purification solutions tailored to meet the evolving needs of scientists and professionals worldwide. From innovative chromatography systems to high-performance consumables, our products are designed to deliver precision, efficiency, and reliability. Browse below to discover how our cutting-edge technologies can empower your research and applications.

SepaBean™ machines & SepaFlash™ Columns

Product Line	SepaBean™ machines	SepaFlash™ FP LT-ELSD	SepaFlash™ Columns
Picture			
Description	SepaBean™ machines deliver efficient and user-friendly flash chromatography solutions for diverse applications. Available Models: • SepaBean™ machine U • SepaBean™ machine T • SepaBean™ machine • SepaBean™ machine 2 • SepaBean™ machine L	The SepaFlash™ FP LT-ELSD is a low-temperature evaporative light scattering detector, ideal for non-chromophoric analytes like carbohydrates, lipids, and polymers. It ensures high sensitivity, low noise, and optimal detection of thermally unstable compounds, compatible with all SepaBean™ models.	SepaFlash™ columns deliver precise, durable, and efficient purification for diverse chromatography applications. Available Series: • SepaFlash™ Standard • SepaFlash™ Large Size • SepaFlash™ HP, Bio & Bonded • SepaFlash™ iLOK™ & iLOK™-SL • SepaFlash™ iLOK™ Large-Size

Other SepaFlash™ Products

Product Line	SepaFlash™ Ultra-Pure Bare Silica Gels	SepaFlash™ Ultra-Pure Bonded Silica Gels	SepaFlash™ TLC Plates
Picture			
Description	SepaFlash™ Ultra-Pure bare silica gels in bulk provide high-quality phases for chromatography, available in both irregular and spherical shapes. With particle sizes ranging from 10 µm to 200 µm and pore diameters from 50 Å to 300 Å, these silicas meet diverse application needs. They are offered in convenient 1 kg, and 25 kg containers.	SepaFlash™ Ultra-Pure bonded silica gels offer versatile chromatography solutions in irregular or spherical shapes, with particle sizes from 10 µm to 40 - 75 µm and pore diameters of 50 Å to 300 Å. Available in reversed phase, normal phase, ion-exchange, HILIC, and alumina phases.	SepaFlash™ TLC plates are manufactured with high-quality media to match the sorbents in SepaFlash™ flash columns. This alignment ensures greater reproducibility in method development. Available with aluminum and glass backings, these plates come in a wide range of sizes from 2.5 x 7.5 cm to 20 x 20 cm, supporting both analytical and preparative chromatography needs.

About Santai

Discover Santai Technologies

Founded in 2004, Santai Technologies is a leading technology company dedicated to advancing separation and purification tools. With over 20 years of expertise, we have become a trusted partner for professionals and scientists across the pharmaceutical, biotechnology, fine chemicals, natural products, and petrochemical industries.

Santai is renowned worldwide for its outstanding flash chromatography instruments and consumables, setting new benchmarks for efficiency, precision, and reliability in the global market.

Santai: 20 Years of Innovation in Chromatography

For two decades, Santai has been a leader in chromatography innovation, providing
for scientists worldwide. With our advanced SepaBean™ machines and SepaFlash™
innovation and quality, continually empowering researchers with more effective pu

2004

Santai Technologies was founded to develop separation and chromatography solutions.

2005

The SepaFlash™ Standard Series was launched, leveraging proprietary packing technology for enhanced performance.

2009

The SepaFlash™ HP Series has been launched, offering enhanced pressure resistance.

2013

The SepaFlash™ iLOK™ has been launched, providing the convenience of manual assembly and flexible sample loading options.

2015

The SepaFlash™
and SepaFlash™
have been launc

Santai was recognized as "High-tech Enterpr

The SepaBe
launched
chromatogr
networking capab

About Santai Science

Established in 2018 as a sister company of Santai Technologies, Santai Science is headquartered in Montreal, Canada. Its core mission centers on the commercialization of cutting-edge separation and purification tools, including product demonstrations and specialized services.

Santai Science also plays a vital role in providing customer training, delivering technical support, and managing order processing and shipment directly from its Montreal office.

Our Extensive Global Reach

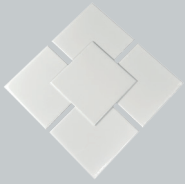
Santai operates and maintains warehousing services across America, Asia, India, and Europe. This strategic global presence ensures that our products and services are readily accessible and efficiently delivered to clients around the world.

cutting-edge solutions that streamline purification processes
columns enhancing efficiency, we remain committed to
rification technologies.

Standard Size 3 kg
Bonded Series
hed.

Santai Science was founded in Canada, alongside the iLOK™-SL flash column with 15 % free space for solid loading.

The iLOK™ Large Size empty columns (800 g to 7 kg) were launched, together with new product lines like bulk silica gels and TLC plates.



2016

rise"

an™ machine was
as a unique flash
aphy system with
ilities and built-in
intelligence.

2018

2021

The SepaBean™ machine L was launched, featuring large 5 kg and 10 kg flash columns designed for the pilot-scale market.

2022

2024-2025

The 2nd generation SepaBean™ machine is launching, offering enhanced performance.

SepaFlash™ Bulk Silica Gels

Reliable Solutions for Fast and Precise Separations!

Product Overview

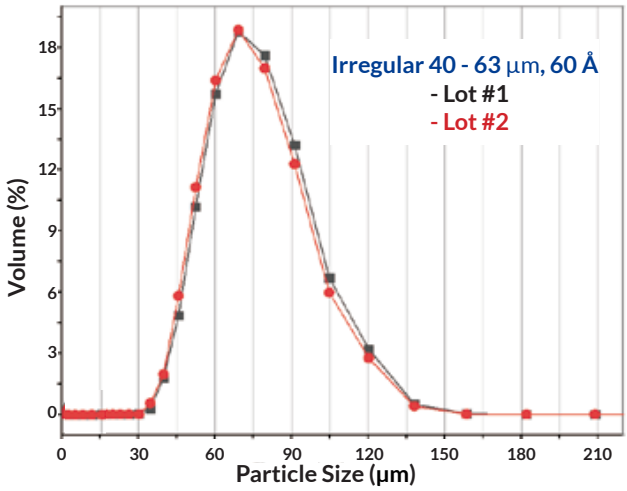
SepaFlash™ Ultra-Pure silica gels offer high purity, reliability, and cost-effectiveness. Available in bare and bonded forms, they are designed for flash chromatography, preparative purification, and process-scale applications, ensuring high resolution and efficiency.

With a focus on quality and consistency, these silica gels are manufactured using advanced processes to maintain tight particle size distribution, uniform pores, and batch-to-batch reproducibility. These features support scalable, high-performance separations, enabling researchers and production chemists to achieve efficient, cost-effective purification.

SepaFlash™ Bulk Silica Gels

Key Features

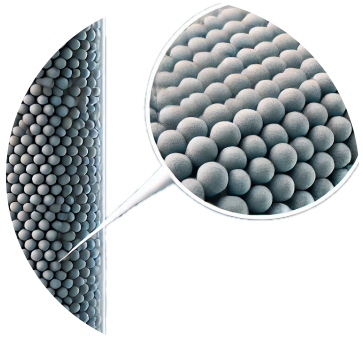
- **Ultra-High Purity**
  Low trace metal content ensures peak reproducibility, superior peak shapes, and minimal interference.
- **Tight Particle Size Distribution**
  Ensures uniform column packing, better flow rates, and reduced fines.
- **Enhanced Surface Area & Density**
  Provides greater sample loading capacity, boosting productivity.
- **High Mechanical Stability**
  Withstands high-pressure applications without degradation, ensuring durability and performance under demanding conditions.
- **Batch-to-Batch Consistency**
  Each batch undergoes rigorous quality testing to ensure reliable and reproducible chromatographic performance (see graph at right).



Importance of Tight Particle Size Distribution in Chromatography

A tight particle size distibution enhances column performance by ensuring homogeneous packing which leads to:

1. **Higher resolution:** uniform particles minimize band broadening, improving separation
2. **Better reproducibility:** consistent flow dynamics lead to reliable results
3. **Optimized flow rate:** reduces backpressure variations, ensuring stable operation
4. **Improved peak shape:** uniform packing minimizes peak tailing
5. **Longer column life:** prevents channeling and void formation



In summary, a narrow particle size distribution leads to better efficiency, precision, and longevity in chromatography.

Grafting Process of SepaFlash™ Bonded Silica Gels

The grafting process of SepaFlash™ bonded silica gel functionalizes the silica surface with organosilanes, enhancing efficiency, selectivity, and versatility for both normal-phase and reversed-phase chromatography. Our state-of-the-art bonding capabilities enable the manufacture of multi-ton scale silica, ensuring scalability for industrial applications. This process follows key steps, optimizing surface chemistry, stability, and retention properties to ensure consistent and high-performance separations.

Step	Description	Key Features
1. Surface Activation (Optional)	Prepares silica by generating reactive silanol (-Si-OH) groups, using the most suitable method to ensure optimal surface activation.	Removes impurities, increases hydroxyl group density, and prepares the silica surface for effective bonding reactions.
2. Silane Coupling	Introduces organosilanes to react with silanol groups, forming stable Si-O-Si bonds.	**Monomeric grafting:** forms a thin, single-layer attachment with high surface coverage, ensuring faster mass transfer and sharper peaks. Provides moderate retention strength, making it ideal for rapid separations of small organic molecules under standard conditions. **Polymeric grafting:** creates a multi-layered, cross-linked network, offering enhanced durability, stronger retention, and greater stability under extreme pH and solvent conditions. Best suited for extended separations of large or highly hydrophobic analytes.
3. Endcapping (Optional)	Neutralizes unreacted silanol groups using small silane molecules (e.g., TMS), reducing secondary interactions and preventing peak tailing.	**Full endcapping:** endaps silanol sites, minimizing interactions and peak tailing, ideal for neutral and basic analytes in reversed-phase chromatography. **Selective endcapping:** retains some silanol groups for hydrogen bonding, enhancing retention of polar compounds like peptides and proteins, commonly used in polar-embedded phases. **Proprietary endcapping:** optimized for minimal secondary interactions and high retention efficiency, ensuring maximum performance and longevity in demanding separations.
4. Drying & Quality Control	Removes residual solvents and reactants, followed by thorough testing for product consistency and purity.	Drying removes residual solvents, followed by elemental analysis, surface area measurement, and chromatographic performance evaluation to ensure purity, consistency, and optimal separation efficiency.

Seamless Scale-Up: From Lab to Production

With SepaFlash™ Bare & Bonded silica gel, you can seamlessly scale from lab research to manufacturing without changing the base material or bonding chemistry. Whether using analytical HPLC, preparative HPLC, or flash chromatography, the same silica characteristics ensure reproducibility and consistency at every stage.

For example, you could start with SepaFlash™ **40 - 63 µm** silica gel in the laboratory for method development and initial purification. Then, using:

- **10 µm** silica gel for higher-resolution purification
- **15 µm** or **20 - 45 µm** silica for even larger-scale preparative chromatography
- **60 - 200 µm** silica for process chromatography

This flexibility applies to both bare and bonded silica, allowing seamless method transfer from normal-phase or reversed-phase chromatography to large-scale purification. Sourcing from the same manufacturer eliminates variability, ensuring consistent retention times, selectivity, and resolution.

Whether purifying milligrams in the lab or kilograms in production, SepaFlash™ silica gel enables a smooth, reliable scale-up while minimizing risk and maximizing efficiency.

SepaFlash™ Portfolio

SepaFlash™ Bare Silica Gels

SepaFlash™ Bare Silica Gels, available in both irregular and spherical forms, deliver high-purity, efficient separations for chromatography and flash purification. For a complete list of available SepaFlash™ Bare Silica Gels, refer to the tables below or the Ordering Information section.

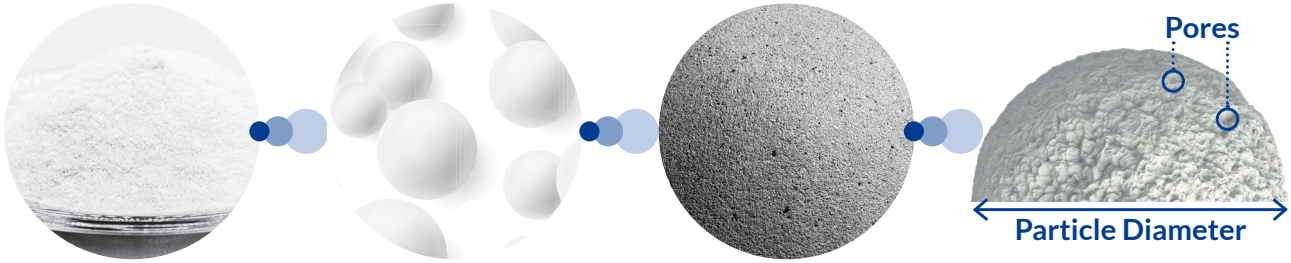
Particle Size		Pore Size	
Irregular Bare Silica Gels			
• 15 - 40 µm • 40 - 63 µm	• 60 - 200 µm • 200 - 500 µm	• 60 Å • 90 Å	• 150 Å • 300 Å

Particle Size		Pore Size	
Spherical Bare Silica Gels			
• 10 µm • 20 µm • 25 µm	• 20 - 45 µm • 50 µm • 40 - 75 µm	• 50 Å • 70 Å	• 100 Å • 300 Å

Relation Between Pore Size, Pore Diameter and Surface Area

This illustration demonstrates the relationship between particle diameter and pore structure in silica gel. The particle diameter refers to the overall size of the silica particle, while the pores represent the internal cavities within the particle. The pore size of silica gel directly affects its surface area and chromatographic performance:

- **Larger pores:** lower surface area, suitable for large molecules like peptides and proteins, ensuring easy pore access
- **Smaller pores:** higher surface area, ideal for small molecules, enhancing retention through greater surface interactions



SepaFlash™ Portfolio

SepaFlash™ Bonded Silica Gels

SepaFlash™ Bonded Silica Gels provide high-performance, chemically modified silica for normal-phase, reversed-phase, ion-exchange, and HILIC applications. The various chromatography modes are outlined below.

Chromatography Mode	Stationary Phase	Separation Mechanism	Key Applications	Typical Mobiles Phases
Normal Phase Chromatography	**Polar** (Bare Silica, NH_2, Diol)	**Polarity-based** (polar compounds elute last)	Pharmaceuticals, polar organics, fine chemicals	Non-polar organic solvents (hexane, ethyl acetate)
Reversed Phase Chromatography	**Non-polar** (C18, C8, C4, CN, Phenyl, Phenyl-Hexyl)	**Hydrophobic interactions** (non-polar compounds elute last)	Lipids, peptides, hydrophobic molecules	Polar solvents (methanol, acetonitrile, water)
Ion-Exchange Chromatography	**Charged silicas:** Anion exchanger: SAX Cation exchanger: SCX	**Charge-based interactions** (oppositely charged analytes bind and elute with salt gradient or pH change)	Proteins, nucleotides, charged molecules	Aqueous buffer with varying ionic strength or pH
HILIC Chromatography	**Polar** (NH_2, Diol)	**Hydrophilic partitioning and hydrogen bonding** (polar compounds elute last)	Sugars, carbohydrates, hydrophilic compounds	Aqueous-organic mixtures (high organic content, low water content)

The stationary phase is key to separation efficiency and selectivity in chromatography. The table below compares various silica phases, their applications, and key features.

Stationary Phase	Chromatography Mode	Key Features
Octadecyl (C18)	Reversed Phase Chromatography	Highly hydrophobic phase, ideal for retaining non-polar compounds such as long-chain lipids and hydrophobic peptides
Octadecyl (C18) AQ		Specialized C18 bonded silica for high aqueous mobile phases, preventing phase collapse and enhancing polar compound separations
Octyl (C8)		Moderately hydrophobic phase, offering faster elution for mid-polarity compounds compared to C18
Butyl (C4)		Less hydrophobic than C18 and C8, providing better selectivity for large biomolecules such as proteins and peptides
Phenyl		Aromatic phase offering π-π interactions, enhancing selectivity for aromatic and conjugated compounds
Phenyl-Hexyl		Combines hydrophobic and π-π interactions for improved retention of aromatic and non-polar compounds
Cyano (CN)	Normal Phase & Reversed Phase	Moderately polar phase allowing both normal phase and reversed-phase separations
Diol	Normal Phase & HILIC Phase	Alternative to bare silica, reducing strong silica interactions for improved selectivity and controlled retention
Amino (NH_2)	Normal Phase, Ion-Exchange & HILIC Phase	Polar phase suited for HILIC and carbohydrate separations
Strong Anion Exchange (SAX)	Ion-Exchange Chromatography	Charged phase for retaining negatively charged compounds
Strong Cation Exchange (SCX)		Charged phase for retaining positively charged compounds
ARG	HILIC Phase	ARG Silica, modified with arginine, offers strong hydrophilic affinity, high separation efficiency, and distinct selectivity

This diagram illustrates the polarity scale of various chromatographic phases, ranging from polar silica to non-polar C18.

Selecting the Right Silica for Chromatographic Applications

Choosing the right silica gel is crucial for achieving optimal separation, resolution, and efficiency. The choice of silica gel impacts:

- Separation efficiency (resolution)
- Sample loading capacity
- Flow rate and back pressure

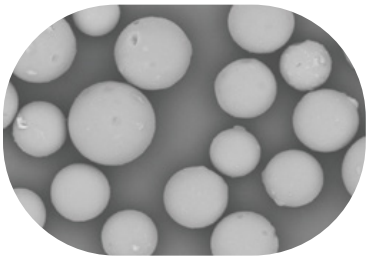
Selecting the optimal silica gel depends on your sample characteristics and purification objectives. Refer to the following pages for detailed guidance.

1. Spherical vs Irregular Silica: Which One to Choose?

Silica gel is available in two primary shapes: spherical and irregular. The shape of the silica significantly impacts chromatography performance, affecting factors such as packing efficiency, flow rate, column performance, and resolution.

Spherical Silica

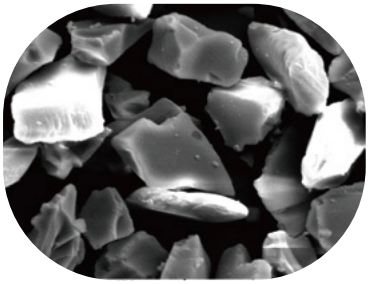
Spherical silica particles are manufactured using advanced processes that create uniform, highly structured beads. These particles offer several advantages:



- **Efficient packing & flow:** higher packing density ensures better efficiency with lower backpressure and consistent flow rates.
- **Enhanced reproducibility & resolution:** uniform particle distribution improves batch-to-batch consistency and peak sharpness.

Irregular Silica

Irregular silica, produced through milling and classification, remains a popular choice due to its cost-effectiveness and versatility. The table below highlights its key advantages for various chromatographic applications.



- **More cost-effective:** a lower-cost option for routine applications and large-scale purifications.
- **Good for standard flash chromatography:** suitable for processes where high resolution is not required.

When to Choose Spherical vs Irregular Silica

The decision between spherical and irregular silica depends on the chromatographic application, cost considerations, and required efficiency. Use the table below as a guide:

Silica Shape	Advantages	Best For
Spherical	Better packing, lower back pressure, higher efficiency, improved resolution	Preparative chromatography, high-resolution separations
Irregular	More cost-effective, good for large-scale purification, high surface area	Standard flash chromatography, cost-sensitive applications, large-scale purifications

Tips

- **Use spherical silica for** high-resolution, high-efficiency separations with better packing, lower backpressure, and improved flow.
- **Use irregular silica for** a cost-effective choice for standard flash chromatography and bulk separations.

Selecting the right shape optimizes performance and workflow efficiency while meeting your purification needs.

Selecting the Right Silica for Chromatographic Applications (cont'd)

2. Particle Size: Balancing Resolution and Flow Rate

Selecting the right particle size is essential for balancing resolution, flow rate, and sample loading capacity, ensuring optimal separation efficiency and performance.

Particle Size	Advantages	Best For	Considerations
10 µm	Exceptional resolution & peak sharpness	Ultrahigh-resolution or very difficult separations	Very high backpressure, requires HPLC system or DAC column
15 µm	Excellent resolution with sharper peaks	High-resolution preparative separations	Higher backpressure, requires precise flow control
15 - 40 µm	Improved resolution & sharper peaks	High-resolution separations	Higher backpressure, slower flow rate
25 µm (20 - 45 µm)	Balance between resolution & speed	General-purpose and semi-preparative applications	Moderate backpressure, versatile use
50 µm (40 - 63/75 µm)	Good balance between resolution & speed	Most popular size for flash chromatography	Reasonnable backpressure
60 - 200 µm	Faster flow rate & high sample loading	Large-scale flash chromatography	Lower resolution
200 - 500 µm			

Tips

- **For high-resolution & HPLC applications**, 10 to 40 µm silica provides superior separation but requires higher operating pressure.
- **For standard flash chromatography**, a 50 µm mean particle size (e.g., 40 - 63 µm or 40 - 75 µm) provides an optimal balance of resolution, speed, and ease of use.
- **For large-scale purification or viscous samples**, 60 - 200 µm silica enables faster flow rates, high sample loading, and reduced backpressure, making it ideal for bulk purification.

By carefully selecting the appropriate particle size, you can ensure optimal chromatographic performance and cost-effectiveness.

3. Pore Size: Matching to Your Target Molecules

Pore size determines the interaction between silica and your compounds. Smaller pores increase surface area, improving separation of small molecules, while larger pores accommodate larger molecules.

Pore Size	Best For	Typical Applications
50 - 70 Å	Small molecules (< 1,000 Dalton)	Pharmaceuticals, organic compounds, small drug molecules, alkaloids, and flavonoids
90 - 300 Å	Medium-sized molecules (1,000 - 10,000 Da)	Peptides, lipids, small proteins, oligonucleotides, steroids, and dye molecules
> 300 Å	Large biomolecules (> 10,000 Da)	Large proteins, antibodies, nucleotides, polysaccharides, and synthetic polymers

Tips

- **Use 50-70 Å silica** for small organic molecules and pharmaceutical compounds where high surface interaction improves separation.
- **Use 90 - 300 Å silica** for peptides, lipids, and small proteins, ensuring balanced retention and diffusion.
- **Use > 300 Å silica** for large biomolecules like proteins, nucleotides, and polymers to prevent steric hindrance and improve recovery.

Choosing the right pore size ensures optimal separation, peak resolution, and recovery. Proper selection minimizes steric hindrance and enhances retention, leading to reliable and reproducible chromatography results.

Selecting the Right Silica for Chromatographic Applications (cont'd)

4. Surface Chemistry: Bare vs. Bonded Phases

Silica gel is one of the most versatile stationary phases in chromatography, owing to its customizable surface chemistry. Depending on the chromatographic technique and the nature of the analytes, silica gel can be used in its bare (unbonded) form or chemically modified (bonded) to enhance its selectivity and performance.

Bare Silica

Bare silica provides a highly polar surface that interacts strongly with polar compounds. Its high polarity makes it ideal for normal-phase chromatography, where polar analytes are retained on the stationary phase while non-polar compounds elute more quickly. Key characteristics and advantages include:

- **Applications:** normal phase chromatography for effective separation of polar organic compounds, pharmaceuticals, and fine chemicals with high polarity differences.
- **Mobile phases:** typically used with non-polar solvents such as hexane, ethyl acetate, and dichloromethane.

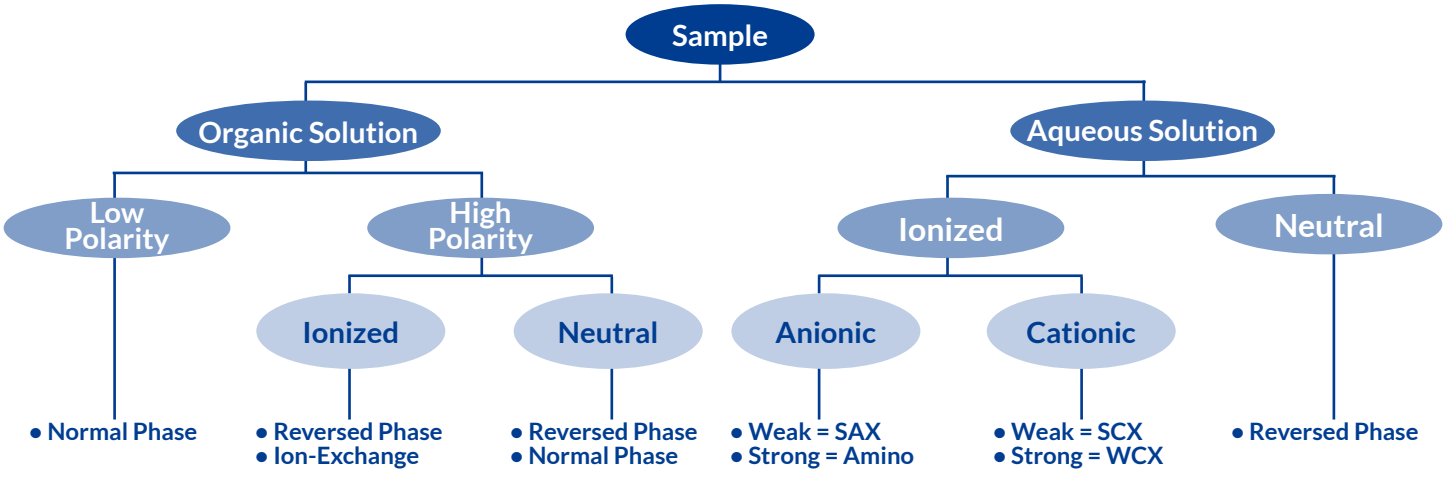
Bonded Silica

Bonded phases are designed to modify the polarity and interaction properties of silica, broadening its suitability for a wide range of chromatographic techniques. The table below summarizes the recommended silica gel types for various chromatography applications, detailing their phase types, typical uses, and compatible mobile phases.

Application	Best Silica Type	Phase Type	Examples	Typical Mobiles Phases
Normal Phase Chromatography	Bare Silica, NH_2, Diol	Highly polar surface; retains polar compounds	Pharmaceuticals, polar organics, fine chemicals	Hexane, Ethyl Acetate, Dichloromethane
Reversed Phase Chromatography	C18, C8, C4, CN, Phenyl, Phenyl-Hexyl	Hydrophobic (C18, C8); moderately polar (CN)	Lipids, peptides, hydrophobic molecules	Methanol, Acetonitrile, Water
HILIC Chromatography	NH_2, Diol	Polar; retains hydrophilic compounds	Sugars, carbohydrates, hydrophilic compounds	Acetonitrile, Water
Ion-Exchange Chromatography	SAX, SCX	Binds negatively (SAX) or positively (SCX) charged compounds	Proteins, nucleotides, charged molecules	Water, Buffered Mobile Phases
Peptide & Protein Purification	C18, C8 (Wide Pore)	Hydrophobic; optimized for large biomolecules	Biopharmaceuticals, peptide drugs	Water, Acetonitrile, TFA
Preparative Chromatography	Spherical Silica (10 - 40 µm)	High-purity compound isolation	Pharmaceuticals, specialty chemicals	Methanol, Acetonitrile, Water

Sorbent Selection Based on Solvent Nature

Sorbent selection is guided by key considerations outlined in the diagram below. These include the sample solvent type (aqueous or organic), the nature of the analyte (non-polar, polar, or ionized), and the degree of ionization (strong or weak acid/base). This structured approach provides a clear and logical framework for selecting the appropriate method.



4. Surface Chemistry: Bare vs. Bonded Phases (cont'd)

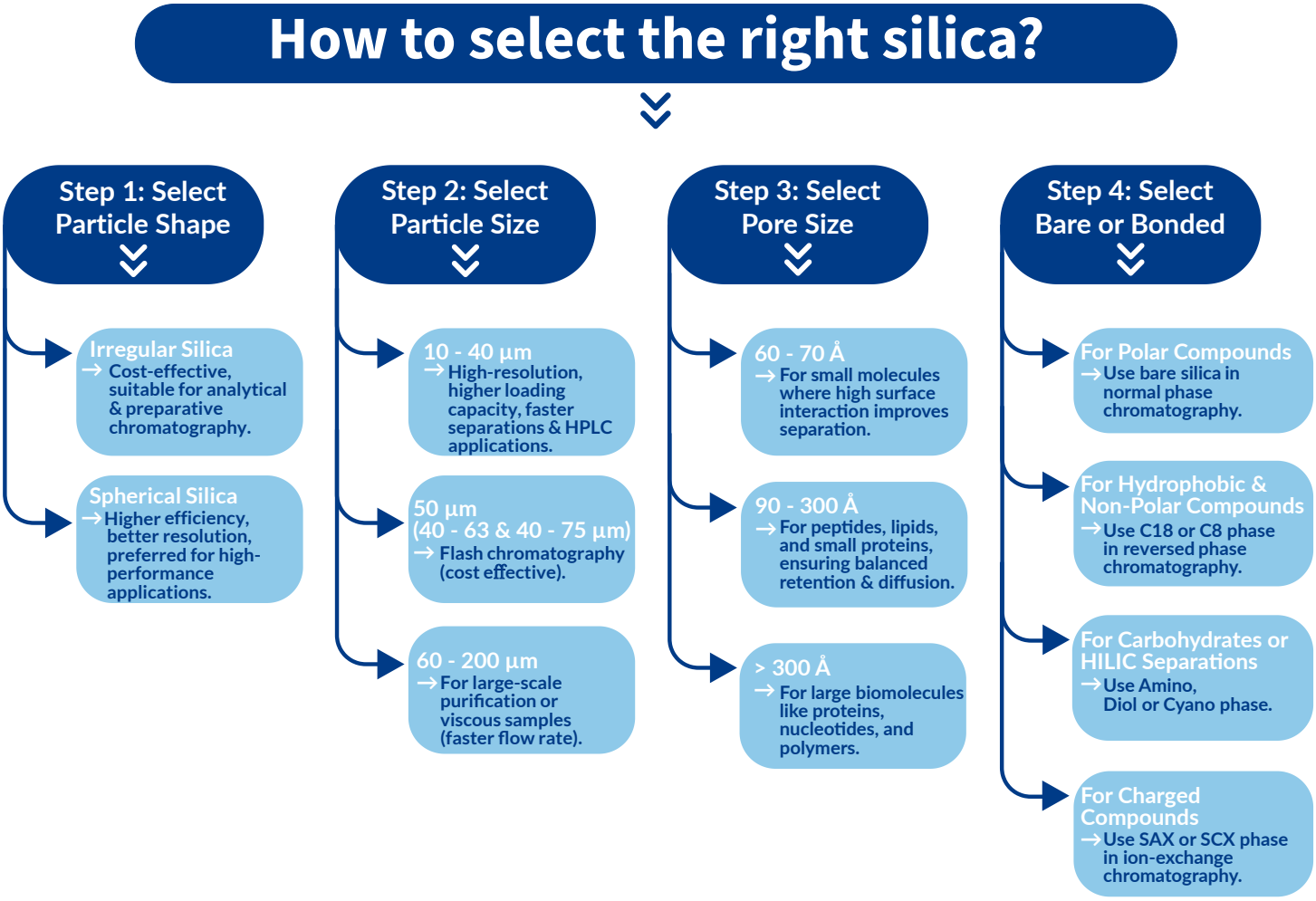
Tips

- **For polar compounds,** use **bare silica** in normal phase chromatography.
- **For hydrophobic** and **non-polar compounds,** use **C18 / C8 / C4** in reversed phase chromatography.
- **For aromatic compounds,** start with a Phenyl or Phenyl-Hexyl phase, which offers enhanced selectivity through π-π interactions. If these do not provide satisfactory results, consider using an alternative reversed phase sorbent.
- **For specific applications** like **carbohydrates or HILIC separations,** use **NH_2, Diol or CN**.
- **For charged compounds,** use **SAX / SCX** in ion-exchange chromatography.

Carefully matching silica type to your application ensures maximum efficiency, reproducibility, and separation quality.

5. In summary

Selecting the right silica gel is essential for optimal separation, efficiency, and reproducibility. By considering particle size, pore size, surface chemistry, and shape, you can achieve the best chromatographic performance for your application.



Chromatography Troubleshooting Guide

This guide highlights and resolves common challenges encountered during a chromatography experiment.

Issue	Possible Cause	Solution
Uneven Packing (Irregular Bed Formation)	Pouring the slurry too quickly	Slowly pour the slurry while maintaining a steady flow
	Uneven solvent draining	Use a gentle tapping motion on the column sides to settle the silica evenly
	Air bubbles trapped in silica bed	Degas the slurry before pouring using mild vacuum or sonication
Slow Flow Rate or No Flow	Column packed too tightly	Reduce packing pressure to allow better flow
	Clogged column frit or tubing blockage	Clean or replace clogged frits and check tubing for blockages
	Silica particle size too small	Use a larger particle size for faster flow
	Mobile phase too viscous	Modify solvent composition to lower viscosity
Channeling (Cracks or Gaps in the Silica Bed)	Uneven solvent addition	Slowly introduce solvent to prevent turbulence
	Improper packing of the column	Repack the column with a uniform slurry method
Poor Separation or Peak Resolution	Uneven silica packing affects band diffusion	Ensure uniform packing by following proper slurry preparation and pouring techniques
	Inappropriate solvent gradient	Optimize the solvent gradient by adjusting polarity changes
	Overloaded sample concentration	Dilute the sample or reduce injection volume
Silica Gel Loss During Packing	Loose packing at the column bottom	Use a frit or filter at the column base to prevent silica loss
	No proper frit or cotton support at the base	Press down a small amount of solvent-wetted silica before pouring the slurry
Air Bubbles in the Column	Insufficient degassing before pouring	Degas the slurry properly using sonication or vacuum
	Fast solvent addition causing turbulence	Add solvent gently along the column walls to prevent air entrapment
	Improper pouring of the slurry	Allow the silica to settle naturally and avoid sudden solvent drainage
Sample Sticking to the Column	Sample interaction with the stationary phase is too strong, leading to retention	- **For reversed phase chromatography**, increase the percentage of organic solvent (e.g., acetonitrile or methanol) to reduce hydrophobic interactions - **For normal phase chromatography**, increase the polarity of the mobile phase (e.g., adding more polar modifiers like ethyl acetate) to improve elution
	Inadequate organic modifier in the mobile phase	Adjust buffer composition or add appropriate modifiers

Ordering Information

Bare Silica Gels

Tables below lists the product numbers for both Irregular & Spherical Bare Silica Gels based on their mean particle size and nominal pore diameter. To place an order, add the desired quantity to the product number, such as "-1kg" for 1 kg or "-25kg" for 25 kg.

Mean Particle Size	Nominal Pore Diameter			
	60 Å	90 Å	150 Å	300 Å
Irregular Bare Silica Gels				
15 - 40 µm	ST5102-IR	ST5112-IR	ST5152-IR	ST5172-IR
40 - 63 µm	ST5101-IR	ST5111-IR	ST5151-IR	ST5171-IR
60 - 200 µm	ST5107-IR	ST5117-IR	ST5157-IR	ST5177-IR
200 - 500 µm	ST5109-IR	ST5119-IR	ST5159-IR	ST5179-IR

Mean Particle Size	Nominal Pore Diameter			
	50 Å	70 Å	100 Å	300 Å
Spherical Bare Silica Gels				
10 µm	-	-	ST6124-SP / ST2124-SP	-
15 µm	ST2103-SP(H)	-	ST2123-SP	-
20 µm	-	ST2105-SP	ST2125-SP	-
25 µm	ST2102-SP(H)	-	ST2102-SP(S)	-
20 - 45 µm	-	ST2102-SP	ST2122-SP	ST2172-SP
50 µm	ST2101-SP(H)	ST6101-SP	-	-
40 - 75 µm	-	ST2101-SP	ST2121-SP	ST2171-SP

Functionalized Silica Gels

This section will guide you in constructing your SepaFlash™ Bonded Silica Gels product number. Our standard bonded silica is manufactured using irregular silica gel (40 - 63 µm, 60 Å), along with select spherical silica options. Each product number follows the structure outlined below.

ST [Stationary Phase Code] [Pore Size Code] [Particle Size Code] - [Silica Shape Code] - [Quantity]

Ex: SepaFlash™ High-Quality Irregular C18 Silica, 40 - 63 µm, 60 Å, 500 g: **ST8201-IR-500g**
SepaFlash™ UltraPure Spherical C18 Silica, 40 - 75 µm, 100 Å, 1 kg: **ST5221-SP-1kg**

[Stationary Phase Code]

Stationary Phase	Code
Octadecyl (C18)	52 or 82
Octadecyl (C18) AQ	52, (AQ)*
Octyl (C8)	58
Butyl (C4)	54
Phenyl	5B
Phenyl-Hexyl	5C
Cyano (CN)	53
Diol	59
Amino (NH_2)	55
SAX	50
SCX	57
ARG	56

** Added at the end of the product number*

[Pore Size Code]

Pore Size	Code
50 Å	0
60 Å	0
70 Å	0
90 Å	1
100 Å	2
150 Å	5
300 Å	7

[Particle Size Code]

Particle Size	Code
10 µm	4
15 µm	3
20 µm	5
25 µm	6
20 - 45 µm	2
40 - 63 µm	1
40 - 75 µm	1
50 µm	0

[Silica Shape Code]

Silica Shape	Code
Irregular	IR
Spherical	SP

If you require a custom product, please don't hesitate to contact us.

Contact Us

Simplify your purification, maximize your efficiency!

Santai Science Inc.

How to Order Santai Science Products

At Santai Science, we take pride in providing our products directly to customers from our Montreal office. Our dedicated team, is here to support your needs every step of the way.

To ensure a smooth ordering process, please include the following details with your order:

- **Company information:** billing and shipping addresses.
- **Order details:** purchase order number or credit card information, item numbers, product descriptions, quantities, and unit of measure.
- **End-user information:** full name, email address, and phone number of the end user.

By Phone

You can place an order with our customer service team in French or English, Monday to Friday, between 8:30 AM and 5:30 PM Montreal time (GMT-5).

Phone: +1 514 505 1378

By Email

Orders can be emailed to the following address:

order@santaisci.com

Online Ordering

1. Visit our website at **www.santaisci.com** and explore our "**Online Store**" by clicking the tab in the top menu bar or the shopping cart icon on the right-hand side.
2. Browse our product catalog and select the items you wish to order, specifying the desired quantities. Once you're ready, click on the shopping cart icon to proceed to checkout.
3. You have several options for checkout:
   - Use express checkout with "Shop Pay" or "Google Pay."
   - Log in to your account, or create one if you'd like.
   - Proceed as a guest.
4. Fill out all the required fields in the form, providing your contact information, selecting your preferred shipping method, and entering your payment details based on the chosen method.
5. Once all the information has been entered, click the "Pay Now" button at the bottom of the page to complete your payment.

Why Choose Santai

At Santai Science, we are committed to empowering your success with our global reach, innovative technologies, and unwavering support. Here's why partnering with us is the right choice for your chromatography needs:

- **Global presence:** Santai Science seamlessly delivers world-class chromatography solutions to customers worldwide, ensuring quality and reliability no matter where you are. No matter where you are, our global presence ensures you receive the quality and reliability you deserve.
- **Innovative solutions for excellence:** elevate your scientific pursuits with our cutting-edge chromatography technologies. Designed with precision and innovation, our solutions empower you to achieve unparalleled results in your research and applications.
- **Unwavering customer support:** your success is our priority. At Santai Science, we go beyond boundaries to provide dedicated, personalized support. Wherever you are, you can count on us to be your trusted partner every step of the way.

Choose Santai Science - because your success drives our innovation.

SepaBean™ Family

machine U
(entry-level)

machine T
(best-seller)

machine
(standard version)

machine 2
(medium pressure)

machine L
(scale-up)

SepaFlash™ Columns

Standard Series

Large Size Series

HP, Bio & Bonded Series

iLOK™ Series
(empty & pre-packed)

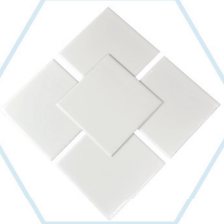
iLOK™ - SL Series
(Solid-load cartridges)

Other SepaFlash™ Products

Ultra-Pure Bare Silica Gels

Ultra-Pure Bonded Silica Gels

TLC Plates



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