



Imagine what's  
possible

**GRACE**  
Talent | Technology | Trust™

NUTRACEUTICAL SOLUTIONS



FINE  
CHEMICALS



CHROMATOGRAPHY  
RESINS



Imagine what you could  
**make possible**

How much faster could you achieve commercialization by using pharmaceutical-grade products that can be tailored to your specifications to overcome challenges unique to nutraceutical and dietary supplement formulations?



## FORMULATION EXCIPIENTS



## ACTIVE INGREDIENT DELIVERY

### Imagine what you could do if:

- *You could improve efficiency and reproducibility* by having access to the highest quality materials available from discovery to mass production
- *Your supplier could customize their materials* to meet your precise requirements
- *Your supplier could help you avoid expensive delays* or even failing to launch a product
- *You knew you could rapidly scale up* to meet demand upon commercialization

### It's all possible with Grace.

We offer unmatched quality and reproducibility of our fine chemicals, chromatography resins, formulation excipients, and active ingredient delivery technologies for nutraceutical and dietary supplement formations.

Our unyielding focus on innovation and advanced technical expertise are built upon a 100-year history of exceeding customer expectations at every phase of the product development process, from discovery to commercialization.

If you find yourself facing a challenge that cannot be met with existing products, we can work with you to customize a solution that meets your needs.



# Expertly synthesized fine chemicals



Imagine what you could do with an experienced nutraceutical R&D partner at your side offering you extensive support in custom chemical synthesis, including product development, project management, and scale-up expertise.

## Our fine chemicals feature:

- Chiral intermediates synthesized on scales up to 80 MT/year per project
- Peptide building blocks and fragments ranging in scale from 1-500 Kg/batch and in lengths from 2-16 amino acids by solution phase chemistry
- Specialty amino acids ranging on scales from grams to low MT levels
- Aryl, aliphatic, and chiral boronic acids and esters
- Specialized fluorine containing building blocks which can be incorporated into a wide range of chiral molecules

## Collaborate with us

We have a deep understanding of organic synthesis in a cGMP environment and work collaboratively with our customers to design, develop, manufacture, and optimize proprietary, industry-leading synthesis technologies and novel molecules of importance to the nutraceutical industry.







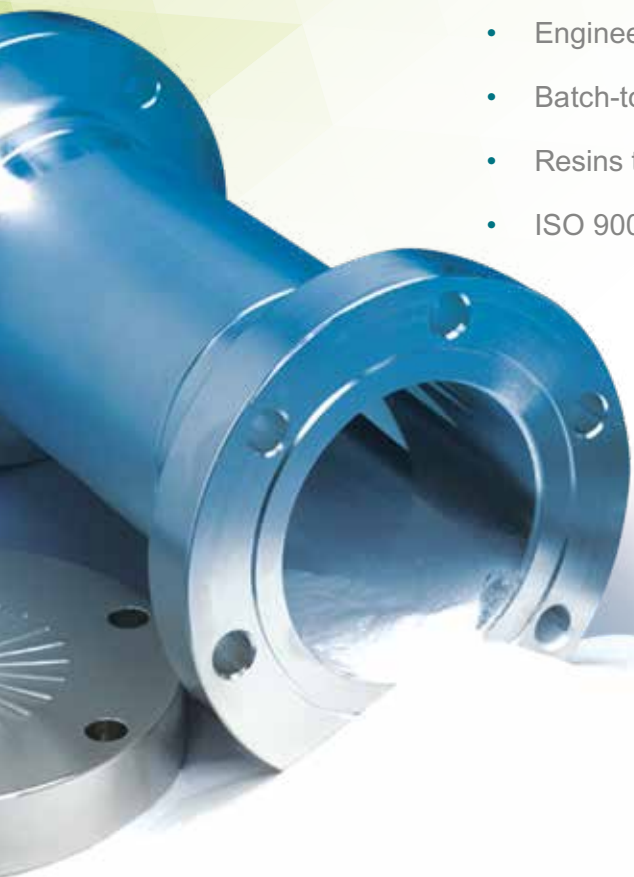
# Highly efficient chromatography



Imagine what you could do with chromatography products that deliver specificity, recovery, reproducibility, and superior efficiency for the very demanding challenge of separating and purifying unique biological compounds.

## Our chromatography resins provide you with:

- The widest range of pore diameters, particle sizes, and chromatography phases available
  - Engineering capabilities that allow particle properties to be fine-tuned to meet your specific needs
  - Batch-to-batch consistency and reproducibility
  - Resins that can be used from analytical lab scale through to commercial scale
  - ISO 9001 certified and FDA registered products
- 
- **DAVISIL® silica** products come in a granular form and are offered in a wide range of particle and pore sizes and in many phases from small to multi-ton quantities.
  - **DAVISIL® Sphere** silica is designed to be extremely robust, with narrow particle size distribution resulting in highly reproducible, superior chromatographic performance. Davisil® Sphere also offers capabilities for protein/peptide separation and purification.
  - **DAVISIL® XWP (Extra Wide Pore)** silica offers superior mechanical stability and large pore sizes with narrow pore size distribution, which make it optimal for separations of large biological molecules.
  - **VYDAC® spheroidal silicas** are well-defined, highly pure, and totally porous separation resins with excellent selectivity and reproducibility for biopurification.
  - **VYDAC® packed columns** are available through our exclusive partner HiChrom at [hichrom.com](http://hichrom.com).







## EXPLORE OUR NEW AND CUSTOMIZABLE PRODUCTS

### **VYKING™** **paramagnetic silica**

Features a novel particle design that clads a paramagnetic core with silica to eliminate the need for chromatography, centrifugation, or vacuum filtration steps required in typical biomolecule purifications.

### **Consult with us**

We can develop customized products to suit your specific needs, including custom bonding of Grace's or your chromatography resins.





# Uniquely functional excipients



Imagine what you could do working with a partner who can engineer materials to your exact specifications and minimize the number of excipients and complexity of your formulation, while expediting manufacturing and improving the efficacy and stability of your nutraceutical product.

## Our SYLOID® and PERKASIL® silica brands have unique combinations of particle properties.

We can fine-tune parameters such as pore volume, pore diameter, pore size distribution, and internal surface area to modify the functionality and meet your exact requirements.

- **SYLOID® AL-1FP/63FP silicas** control trace amounts of moisture and moisture transfer from the surrounding environment which can degrade APIs or cause reactions that negatively impact drugs or decrease shelf life.
- **SYLOID® G silica** for glidant applications is specifically designed as a cost effective glidant in pharmaceutical formulations.
- **SYLOID® 244 FP silica** is a real multi-purpose excipient that can be used in tablet coating. It offers moisture protection, anti-tacking properties, and acts as a glidant and suspension aid.
- **SYLOID® XDP silica** carrier is an optimized mesoporous material engineered for transforming liquids to free-flowing solids, particularly oily actives and lipid-based systems.
- **PERKASIL® precipitated silicas** serve as anti-caking and free flow agents for vitamins, flavors, and fragrances. They are available in a range of grades to meet a wide variety of nutraceutical formulation requirements.





## TRUST OUR RENOWNED QUALITY AND EXACTING STANDARDS

Grace has in-depth experience in the quality and regulatory requirements of the pharmaceutical and nutraceutical industries. Our silica excipients are made according to Good Manufacturing Practices (cGMP) guidelines and we are proud to be foremost in Industry Leading Quality Standards (Excipact® -GMP).





# Exceptionally innovative active ingredient delivery



Imagine what you could do to the sustainability and economics of your nutraceutical products if you could enhance the flavor while reducing the amount of expensive flavoring agents. These goals are no longer an insurmountable challenge.

Our SYLOID® silica active ingredient delivery technology combines Grace's extensive expertise in mesoporous silica gel, novel application methods, and patent pending technologies to accelerate the screening and development of your nutraceutical formulations.

## **Grace's SYLOID® silica active ingredient delivery technology offers five major benefits to nutraceutical manufacturers:**

- Enhanced flavor profile of natural products, thereby minimizing the need for flavoring agents and promoting the sustainable consumption of natural products
- Improved stability profile for moisture and air sensitive products including probiotics, essential oils, resveratrol, and cannabinoids
- Superior handling capabilities and elimination of the need for soft gel capsules, due to our ability to transform oily lipid-based actives into free-flowing powders
- Increased bioavailability through delivery of actives in liquid form inside the pores of the silica carrier, which enhances absorption
- Ability to tailor the release and absorption profile of nutraceutical actives







## DISCOVER OUR EXPANSIVE, CUSTOMIZABLE PORTFOLIO

Due to our vast expertise in particle design, Grace can modify the pore size and surface characteristics of silica to accommodate various nutraceutical active ingredient molecules. Today, Grace's technology is used to deliver a wide array of flavoring agents and nutraceutical products including peppermint extract, vanilla essence, sweeteners, marine oils, probiotics, and even CBD. The net result is an enhanced flavor profile coupled with improved product stability and shelf life.

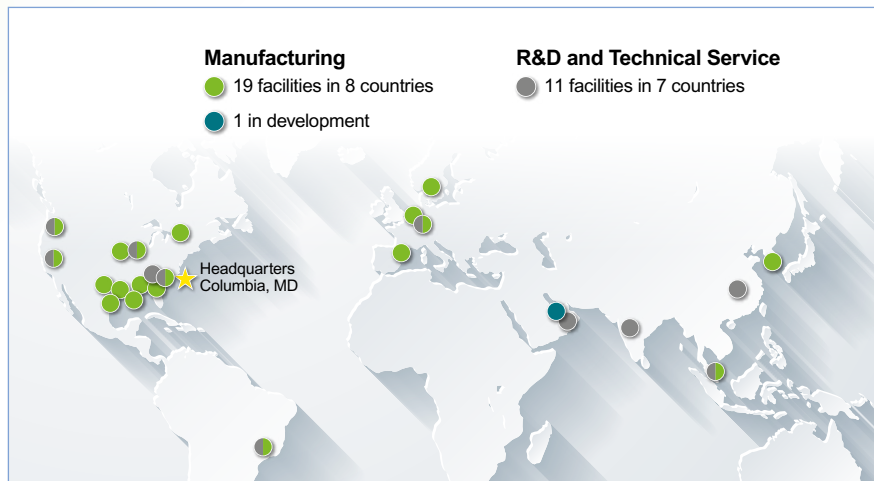


# It's all possible



W. R. Grace & Co. is a leading global innovator built on talent, technology and trust. We serve customers in over 30 countries and have over 3,900 highly skilled employees worldwide. Our teams are dedicated to helping you get your product to market through advanced technology, innovative science, and the strictest oversight.

Our extensive experience with the stringent regulatory and quality requirements in the nutraceutical and dietary supplement industries, technical capabilities, customer service, global presence, and culture of continuous innovation round out a partnership you can trust.



## Grace Corporate Headquarters

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