

Enabling a Healthier World

Lonza

Capsules & Health
Ingredients

Capsugel[®] capsules

Your trusted partner
for complete, high-
quality delivery and
nutraceutical
formulation solutions

From concept to market



The Capsugel[®] capsule portfolio provides a wide variety of high-quality products and technologies **to help you create a customized solution to bring new innovations to market.**

Our innovative capsule solutions

Complete, high-quality products and services portfolio

Capsule customizations to meet your product delivery requirements

Product support services that complement your development journey

At Lonza, our core values and global footprint allow us to offer unparalleled R&D and technical support services backed by world-class manufacturing and logistics infrastructure.

For more than five decades, we have been elevating the standards for high-quality capsules to help eliminate defects and minimize disruptions in your manufacturing processes. **Together, we ensure you deliver a quality product that meets patient and consumer needs, every time.**





Discover _____
the possibilities



Capsugel[®] capsules

Our broad capsule portfolio delivers highly functional and appealing products to **extend your market reach**

Whether it's for a new product or extending the life of an existing one, our innovative **Capsugel[®] capsules open the door to your next breakthrough health product.**

Our capsules are available in the a variety of configurations to help you:

Develop uniquely appealing products

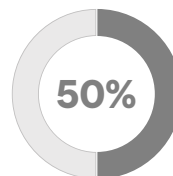
Maximize differentiation, familiarity, and brand loyalty

Improve ingredient and product performance

Satisfy consumer demand for easy-to-swallow, clean label products



Capsules are the **globally preferred dosage form**



Nearly 50% of consumers prefer capsules¹

An optimized portfolio to **accelerate** **your supplement development**

Developed to meet functionality requirements across a multitude of applications

With more than 100 years of dosage form expertise, we have helped our customers configure a wide variety of capsule solutions to meet many common applications and patient needs.

Multipurpose, convenient

Our high-quality, standard
Gelatin capsule with Coni-Snap® secure closure design



Plant-based, protects moisture-sensitive ingredients
HPMC polymer with matte finish and color customization
Vcaps® HPMC capsule



Clean label, free-from

Plant-based, titanium dioxide-free
HPMC polymer with food-based color customization
Vcaps® Plus HPMC capsule



Plant-based, for U.S. made-with organic labeling and oxygen-sensitive ingredients
Plantcaps® pullulan capsule



Plant-based, titanium dioxide-free
HPMC polymer with food-based color customization
Vcaps® Plus HPMC capsule



Performance-enhancing

Plant-based, for moisture- and acid-sensitive ingredients
HPMC polymer helps protect ingredients from stomach acid
DRcaps® designed release capsule



Plant-based, with performance qualities equivalent to gelatin
HPMC polymer with color customization
Vcaps® Plus HPMC capsule



Complex, multi-ingredient

Plant-based, liquid-filled, for customizable release and multi-ingredient products

Beadlets technology



Capsule-in-capsule technology



Beadlets + capsule technology



Vcaps® Plus HPMC capsule with liquid-filled capsule design and fusion technology plus various dosage technologies

Develop
your own
unique
solution

Custom-built capsules

There isn't one universal capsule for all applications

From a broad range of polymers to capsule designs to unique dosage delivery technologies, **we offer a nearly endless combination of customizations to address the encapsulation and delivery requirements of your next breakthrough product.**



Capsule polymers

High quality sourced and manufactured polymers meet consumer-values and formulation needs



Capsule designs

Designs for capsules to improve manufacturing productivity and finished product performance



Capsule personalization

From custom colors to custom printing, we personalize your capsule to meet your requirements



Dosage technologies

Innovative technologies to maximize ingredient functionality and solve formulation challenges

Capsule polymers

The foundation of your capsule

From gelatin, HPMC, to Pullulan, we offer a range of polymers to fit the characteristics of your ingredients and the culture and dietary preferences your consumers.



Premium gelatin polymers

Our most used polymer

Our premium gelatin polymers, from basic to market-trend formulations, are our most popular. Sourced specifically to meet pharmaceutical-grade standards, gelatin polymer blends can be used in powder or liquid-filling options.

	Key value	Release profile	Oxygen protection	Glossy finish	Available in multiple sizes	Widely accepted around the world ²
Bovine/ Porcine	Standard gelatin formulation with supply continuity	Immediate				
Bovine	Considers religious requirements	Immediate				
Porcine	BSE-averse market innovation	Immediate				
Marine¹	<ul style="list-style-type: none"> Sustainably-sourced from fish Complements marine-based formulas 	Immediate				

Certifications and compliance







Vegetarian polymers

Meet consumer and market trends

Our animal-free, vegetarian polymers are uniquely developed to meeting increasing consumer trends in the origin of supplements and plant-based diets. Available in a broad capsule size selection, these polymers can be used in powder or liquid-filling options.

	Product	What is it?	Application examples	Release profile	Key benefits	Enables organic label
HPMC Hypromellose	Vcaps® Plus	Our most versatile vegetarian capsule	All types of supplements	Immediate	<ul style="list-style-type: none"> Protects moisture-sensitive ingredients Glossy, gelatin-like finish 	 in the EU
	Vcaps®	Our customer-favorite vegetarian capsule	Herbs, minerals	Immediate	<ul style="list-style-type: none"> Protects moisture-sensitive ingredients Matte, natural-looking finish 	
	DRcaps®	Our designed release capsule	Probiotics, enzymes, strong-smelling ingredients	Designed	<ul style="list-style-type: none"> Protects acid-sensitive ingredients Designed release of ingredients 	
Pullulan Naturally fermented from tapioca	Plantcaps®	Our cleanest label vegetarian capsule	Omega-3s, vitamin K, strong-smelling ingredients	Immediate	<ul style="list-style-type: none"> Protects oxygen-sensitive ingredients Clean label formulation 	 in the US ³

Certifications and compliance



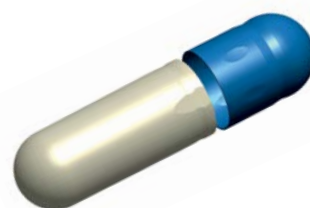
Capsule design

Improve delivery functionality,
filling process and capsule security

We've leveraged more than 100 years of experience and expertise to build innovative capsule designs developed to address specific requirements, in both capsule filling process and dose delivery applications.

Coni-Snap® secure closure design

Patented two-ring closure system facilitating high-speed filling processing and secure locking of capsule body and cap



Liquid-filled capsule design

Specifically designed capsule for encapsulated liquid-based and specialty powder formulations



Sprinkle closure design

Patented technology for easy-opening for sprinkling on food, addressing swallowing concerns of pediatric and geriatric¹ patients



Capsule personalization

Customize your capsule to offer a unique and memorable experience

These highly coveted capsule personalization services also allow you to add customized specifications across weigh sorting, moisture content, microbiological and release testing to meet your specific product requirements.

Color

Our capsules are available in a nearly unlimited array of color options including food-based coloring and titanium-dioxide (TiO₂) free.

Print

Visually maximize your dosage form identity with customizable printing across a wide selection of printing inks, including a select number of food-based inks.

Capsule size

Available in sizes 000 – size 5, along with elongated options in select sizes.

Specifications

Customizable quality testing across weight, moisture and micro specifications, and more, complemented by a customizable capsule stability program.

Flavor and aroma coating

Mask unpleasant tastes and odors and complement formula ingredients with this experiential enhancement.⁴

Leverage our proprietary and broad manufacturing technologies to customize capsules to meet your specific requirements



Filling options

Maximize product formulation functionality and help solve formulation challenges

From solid-filled capsules, including powder, pellets and granules, to liquid and semi-solid dose delivery systems, our innovative capsule designs **help you maximize ingredient functionality and can help solve formulation challenges.**



Ingredient delivery systems



Beadlets technology



DUOCAP® capsule-in-capsule technology



Beadlets + capsule technology



Tablet technology



MiniTabs



Lipid multi-particulate technology⁵



Lava lamps technology
Coming soon!

Fillings



Oil

Enhance bioavailability and stability, formulate with native lipid ingredient forms



Suspension

Enable the combination of solids + liquids, maximize load



Aqueous⁶

Maximize soluble actives, deliver hygroscopic actives, enhance stability



Semi-solid

Maximize bioavailability, stability, and load

Maximize

your product's performance

Dedicated
to your success



Supporting you through the process

Product support services to complement your pre- and post- product development

We offer a variety of services to support your product life cycle from experimentation to development, production to end market delivery.



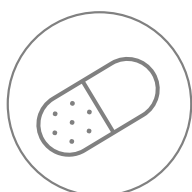
R&D sampling and accessibility services

From in-stock programs to a full range of R&D samples, our capsule access services expedite your product development, giving you order priority and size flexibility to focus on your product launch.



Packaging, shipping, and inventory logistics

Select from an array of capsule container sizes and fiber-free cartons to provide fast-access to your cGMP facility, expedite your shipping, and optimize your warehouse space with our inventory management services.



Capsules filling optimization, training and technical support

Our capsule filling quality by design services help match your filling equipment to the ideal capsule design, meeting your product formulation specifications and optimizing productivity. Our technical service engineers provide basic and advanced training and tools to help your team install your capsule-filling machinery, with 24/7 emergency technical support available.



Professional consulting services (application services)

Supplement your own internal resources and expertise with our experts—from manufacturing to formulation optimization, to regulatory and beyond.

Partnering beyond the capsule

Launch with Lonza™
innovation services

**Our full suite of services to turn
ideas into breakthrough products**

Whether you want the next big idea, have a technical challenge or need formulation or manufacturing support, our end-to-end concept to market services help you launch your next product.

Our services help you with:

- Product design
- Product development
- Product manufacturing
- Distribution and logistics
- Post-launch support

For more information, please call **800-845-6973**, email **solutions@lonza.com** or contact your Lonza Capsules & Health Ingredients sales representative.



Lonza

Capsules & Health
Ingredients

Together
we enable a
healthier world

lonza.com | [capsugel.com](https://www.capsugel.com)

Need help selecting the right capsule configuration?

Please call **800-845-6973**, email solutions@lonza.com or contact your Lonza Capsules & Health Ingredients sales representative.

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