

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 a 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 for your next breakthrough innovation.**

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

Develop uniquely appealing products

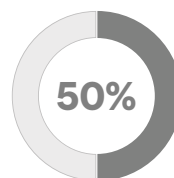
Maximize differentiation, familiarity, and brand loyalty

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

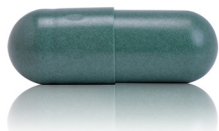
With more than 100 years of dosage form expertise, we have helped our customers configure
a wide variety of capsule solutions to meet many common applications and patient needs.

Multipurpose, convenient

Our high-quality,
standard
Gelatin or HPMC polymers
with **Capsugel® Coni-Snap®**
secure closure design



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



Clean label, free-from

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



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



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



Performance- enhancing

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



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



Liquid-filled capsule
with proprietary fusion
technology for functional
and experiential benefits
Vegetarian or gelatin polymers
with a variety customizations
Capsugel® liquid-filled capsule



Complex, multi-ingredient

Liquid-filled capsule
technologies for
customizable release
profiles and multi-
ingredient products
Vegetarian or gelatin polymers
with a variety customizations

Capsugel® Beadlets
technology



Capsugel® DUOCAP®
capsule-in-capsule
technology



Capsugel® Beadlets + capsule
technology



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 for 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 dietary preferences of 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	Sustainably-sourced from fish, complements marine-based formulations	Immediate				

Certifications and compliance



BSE compliance
GMP
Certificates of Analysis



Vegetarian polymers

Meet consumer and market trends

Our animal-free, vegetarian polymers are uniquely developed to satisfy the growing consumer demand for plant-based products. Available in a broad range of capsule sizes, these polymers can be used in powder or liquid-filling options.

Product	What is it?	Application examples	Release profile	Key benefits	Enables organic label
Capsugel® Vcaps® Plus HPMC capsule	Our most versatile vegetarian capsule	All types of supplements	Immediate	- Protects moisture-sensitive ingredients - Glossy, gelatin-like finish	 in the EU
Capsugel® Vcaps® HPMC capsule	Our customer-favorite vegetarian capsule	Herbs, minerals	Immediate	- Protects moisture-sensitive ingredients - Matte, natural-looking finish	
Capsugel® DRcaps® HPMC designed release capsules	Our designed release, vegetarian capsule	Probiotics, enzymes, strong-smelling ingredients	Designed	- Protects acid-sensitive ingredients - Designed release of ingredients	
Capsugel® Plantcaps® pullulan capsule	Our cleanest label vegetarian capsule	Omega-3s, vitamin K, strong-smelling ingredients	Immediate	- Protects oxygen-sensitive ingredients - Clean label formulation	 in the US ³

Certifications and compliance



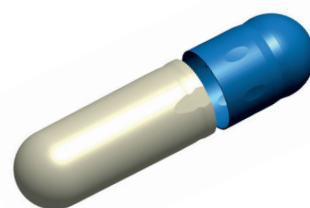
Capsule design

Improve delivery functionality,
filling, 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.

Capsugel® Coni-Snap® secure closure system

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



Capsugel® liquid-filled capsule design

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



Capsugel® Coni-Snap® sprinkle closure system

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

Mix and match a variety of capsule customizations to tailor-make a solution that meets your exact brand and product development requirements.

Color

Customize your capsules with a nearly limitless array of colors, including food-based coloring and titanium-dioxide (TiO₂) free options.

Print

Maximize your branding with customizable printing available in a wide selection of inks, including a menu of unique food-based inks.

Capsule size

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

Specifications

Customizable quality testing, including weight, moisture and microbiological specifications, complemented by a customizable capsule stability program.

Aroma coating

Mask unpleasant odors and complement formula ingredients with this essential oil and aroma-based enhancement.

Leverage our proprietary 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 solve formulation challenges.**



Ingredient delivery systems



Capsugel® Beadlets technology



Capsugel® DUOCAP®
capsule-in-capsule technology



Capsugel® Beadlets +
capsule technology



Capsugel® Tablet technology

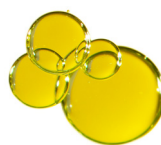


Capsugel® Lipid
multi-particulate technology⁴



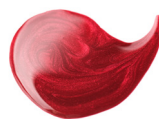
Capsugel® Wave™ technology

Fillings



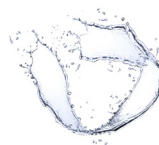
Oil

Enhance bioavailability and stability, formulate with native lipid ingredient forms



Suspension

Enable the combination of solids + liquids, maximize load



Aqueous⁵

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

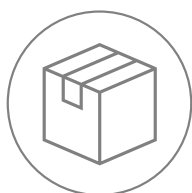
Product support services to complement your pre- and post- product development

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



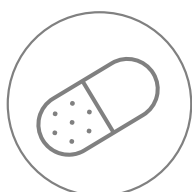
R&D sampling and accessibility services

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 with support from our experts—from manufacturing to formulation optimization, to regulatory and beyond.

Partnering beyond the capsule

Lonza Innovation Services

**Our full suite of services turns
ideas into breakthrough products**

Whether you are looking for your 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 are available to help you with:

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



Lonza

Capsules & Health
Ingredients

Together we enable a healthier world

lonza.com | **capsugel.com**

Need help selecting the right capsule configuration?

Please call **+33 389 205725**, email **solutions.emea@lonza.com** or contact your Lonza Capsules & Health Ingredients sales representative.

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