

VEGETARIAN CAPSULES  
FOR PHARMACEUTICAL  
APPLICATIONS

Capsugel®

**Lonza**

Pharma & Biotech

# Capsugel® HPMC Capsule Portfolio



**Made better. By science.™**



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# WHAT IS HPMC?

## BENEFITS OF HPMC CAPSULES

- Excellent mechanical stability, even at low humidity/moisture conditions
- Low water content
- Global acceptance
- Non-animal origin
- No incidence of cross-linking
- High moisture tolerability range

HPMC (HydroxyPropylMethylCellulose), or Hypromellose, is derived from wood pulp and consists of partly methylated and hydroxypropylated cellulose units.

HPMC is a cellulose-based structure as opposed to the amino acid-based structure of gelatin.

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# WHY CHOOSE HPMC CAPSULES?

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## Formulation Benefits

Some molecules create formulation issues requiring another material besides gelatin. HPMC capsules were introduced to alleviate the problems with APIs and excipients not compatible with gelatin as well as issues with moisture sensitivity and hygroscopicity. To achieve optimal formulation performance, it is important to understand the properties of HPMC capsules.

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## Stability Enhancement

HPMC capsules do not experience cross-linking. The larger moisture tolerability range of HPMC enables more stable formulations.

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## The Non-Animal Alternative

The non-animal origin of HPMC capsules eliminates BSE/TSE concerns and may avoid the need for typical import certifications associated with animal origin products. In addition, they are suitable for certain consumer preferences, such as those with a vegetarian lifestyle or religious requirements.

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## Our Offer

Lonza's Capsugel® HPMC capsule portfolio offers a wide variety of products to meet specific formulation and capsule performance needs. Our experts can work with you to adapt your formulation to a compatible Capsugel® vegetarian capsule.

# LONZA'S CAPSUGEL® PHARMACEUTICAL HPMC CAPSULE PORTFOLIO



## **VCAPS® PLUS**

Vcaps® Plus are an immediate-release capsule in HPMC only, without gelling agents. They offer an excellent dissolution profile with pH independent performance, low moisture content, great machinability and visual quality. Vcaps® Plus have an in-vivo performance bioequivalent to gelatin. They are also well suited for dry-powder inhalation applications.



## **VCAPS® ENTERIC**

Vcaps® Enteric is a capsule technology that simplifies drug enteric delivery implementation. It offers an enteric-release profile to the upper GI tract that meets the disintegration requirements for delayed-release capsules from the European, US and Japanese Pharmacopoeia.



## **VCAPS®**

Vcaps® capsules' gelling agent formulation offers stable and robust performance. They are suitable for moisture-sensitive product fills. As a traditional formulation with gelling agents, its dissolution profile is ideally suited for dry-powder inhalation applications.

## ASK ABOUT OTHER CAPSUGEL® ALTERNATIVE POLYMER CAPSULES



## **PLANTCAPS®**

Made from pullulan, these immediate-release capsules are ideal for oxygen-sensitive ingredients.



## **DRCAPS®**

An innovative HPMC formulation that helps protect acid-sensitive ingredients. The low moisture level of DRcaps® provides enhanced stability for hygroscopic ingredients.

## Lonza's Capsugel® HPMC Pharmaceutical Capsule Portfolio Certifications Preservative Free – Allergen Free – Starch Free



\* Transparent and colored empty capsules are vegan certified. Empty capsules containing the colorant carmine are not vegan certified.

# HPMC CAPSULE SELECTION GUIDE

The tables below are provided to help identify which Capsugel® HPMC capsule is best for your formulation. Our team of experts can help you determine the ideal customized solution to bring your product to market.

	Color options available	Print options available	Visual appearance	Current size range
<b>Vcaps® Plus</b>	Yes	Yes	Lustrous sheen similar to gelatin	00el to 4
<b>Vcaps® Enteric</b>	Contact us	Contact us	Off-white opaque	0 - 00
<b>Vcaps®</b>	Yes	Yes	Natural look with low gloss	000 to 4

	Applications	Moisture content	Intended use
<b>Vcaps® Plus</b>	Moisture-sensitive ingredients	Less than 9%, can be customized	Immediate release with in-vivo performance bioequivalent to gelatin — Dry-powder inhalation
<b>Vcaps® Enteric</b>	Enteric delivery	Less than 7%	Delayed release
<b>Vcaps®</b>	Hygroscopic and moisture-sensitive drugs	Less than 9%, can be customized	Dry-powder inhalation



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## CONTACTS



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