

Tradition im Fortschritt

**GUSTAV PARMENTIER GmbH**

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# PULLULAN CAPSULES



## PULLULAN CAPSULES

### VEGAN AND 100% NATURAL CAPSULES



PULLULAN CAPSULES are made of pullulan, a natural polysaccharide of non-animal origin. They can be used as vegetarian alternative to common gelatine hard capsules. Pullulan is not produced by chemical modification, and is therefore 100% natural, unlike HPMC.

Capsules are available in size 00, 0 and 1. Transparent capsules are always available in stock, minimum order quantity for coloured capsules are 1 million pieces.

Size	00	0	1
Length (mm)	23.5	21.5	19.5
Volume (ml)	0.95	0.68	0.50
Weight (mg)	139	111	83

### Composition of PULLULAN CAPSULES

- Polysaccharides (Poly Maltotriose - Pullulan)
- Purified Water

### FEATURES

PULLULAN CAPSULES have the following unique features:

- Excellent oxygen barrier properties of pullulan, so that these capsules protect 250 times better against oxidation than HPMC capsules and 9 times better than gelatine capsules.
- Because of non-hygroscopic properties of pullulan, the likelihood of a potential crosslinking with encapsulated substances is significantly reduced.
- Very high transparency

These two important properties guarantee superior protection of encapsulated substances and can prolong the shelf life of the capsules considerably.

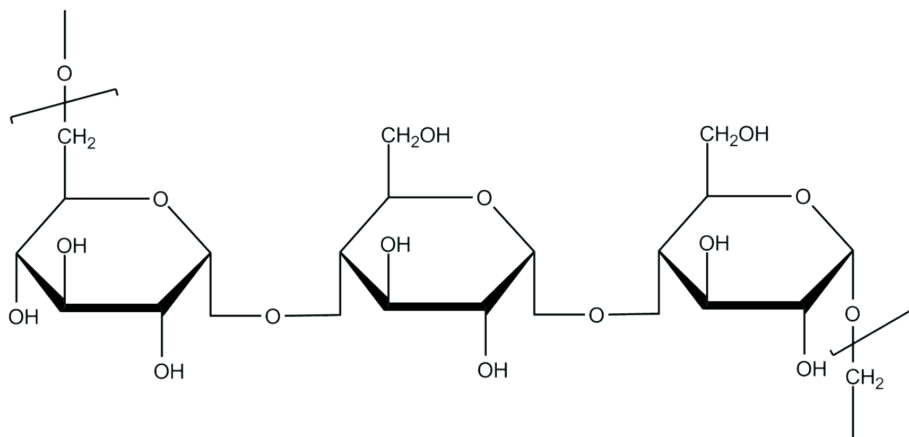
PULLULAN CAPSULES are especially suitable to protect sensitive nutraceuticals like plant extracts or anti-oxidants and pharmaceutical active ingredients.



## ADVANTAGES OF PULLULAN

PULLUAN is:

- not produced by chemical modification, 100% natural
- manufactured by natural fermentation of plant extracts
- neither genetically modified nor pathogenic
- well known in the pharmaceutical and food industry
- non-allergenic
- starch and gluten free



CHEMICAL STRUCTURE OF PULLULAN

## WHAT IS PULLULAN?

PULLULAN is a biopolymer with unique properties. It is a polysaccharide produced by the fermentation of carbohydrate (starch/sugar) by the ubiquitous fungus *Aureobasidium pullulans*. Chemically, it consists of repeated unit of maltotriose units where three glucose units in maltotriose are connected by an alpha-1,4 glycosidic bond and consecutive maltotriose units are connected to each other by an alpha-1,6 glycosidic bond. This typical linkage pattern in fact render some distinctive physical traits which are different from many known polysaccharide. One interesting characteristic is its high adhesion that leads to the formation of strong films with very low oxygen permeability.



PULLULAN is a white to off white powder and is flavorless, odorless tasteless and extremely stable. It is non toxic and non immunogenic in nature and readily dissolves in water.

# Our Product Range

**Coatings**

**Flavonoids**

**Gelatine**

**Globules**

**Hard Capsules**

**HPMC**

**Isinglass**

**Collagen Hydrolysate**

**Parmcompress**

**Parmcel**

**Parmlub**

**Parmlub SSF**

**Pea Protein**

**Phytosterols**

**Surinerts®**

**Tocopherol**

**Tocotrienol**

**Shellac**

**Ultramyl**



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