

# Capsugel<sup>®</sup> titanium dioxide (TiO<sub>2</sub>) free white gelatin capsules

**Discover the possibilities** of TiO<sub>2</sub>-free white gelatin capsules without sacrificing quality and functionality

As of August 7th 2022, titanium dioxide (E171) will be banned as a food additive in the European Union. Therefore, Lonza has expanded the Capsugel<sup>®</sup> hard gelatin capsule offering to feature a TiO<sub>2</sub>-free white product. **This new color formula is an excellent alternative opacifying technology, offering a superior visual and masking solution versus calcium carbonate (CaCO<sub>3</sub>) — the most common TiO<sub>2</sub> alternative.**



## Requirements for TiO<sub>2</sub> alternative

### Functionality

- ✓ Bright white color
- ✓ Opacity/hiding effect
- ✓ Light protection

### Capsule's performance

- ✓ Machinability
- ✓ Robustness
- ✓ Dissolution/disintegration

### Regulatory compliance

## Discover the difference

In head to head comparison, the Capsugel<sup>®</sup> titanium dioxide free white gelatin capsule provides the same whiteness and color masking as TiO<sub>2</sub> capsules, while outperforming the common TiO<sub>2</sub>-free white gelatin capsules on the market.

### Reference

Gelatin capsules colored with TiO<sub>2</sub>



### Lonza's solution

Gelatin capsules colored with Lonza's TiO<sub>2</sub> alternative



### Common TiO<sub>2</sub> alternative

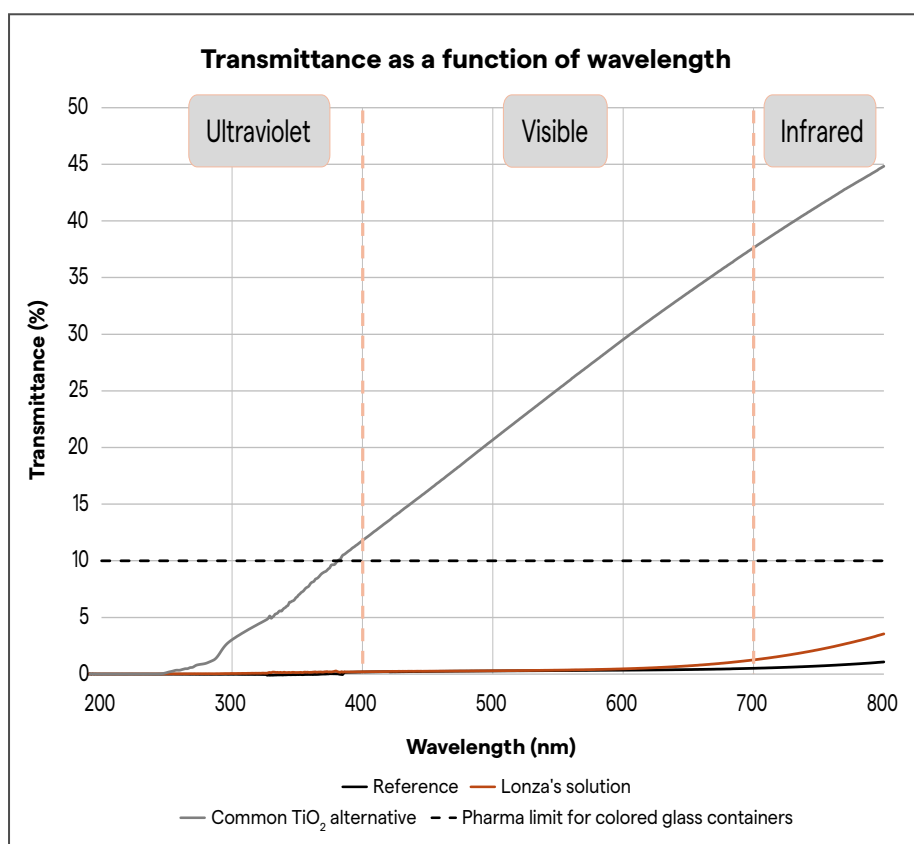
Gelatin capsules colored with CaCO<sub>3</sub>



**Capsules filling** (from left to right): empty capsule / white powder / orange pellets / black pellets

## Protect with opacity

In internal comparison studies, Lonza's TiO<sub>2</sub>-free white gelatin capsule offers excellent light protection and opacity as shown in below data:



Capsule samples	Opacity (contrast ratio*)
Reference	68
<b>Lonza's solution</b>	<b>71</b>
Common TiO <sub>2</sub> alternative	26

- Proposed solution offers **excellent light protection** for the fill, in line with the capsules containing TiO<sub>2</sub>
- Opacity** (contrast ratio) **matches the values obtained** with the reference gelatin capsules colored **with TiO<sub>2</sub>**

\*Contrast Ratio → apparent reflectance of the material backed by a perfectly absorbing surface (black) divided by its apparent reflectance when backed by highly reflecting material (white).

## Capsule composition

Ingredient	Function	EU Regulatory references	E number under EU regulation 1333/2008
Gelatin	Structural polymer	(EU) 853/2004	Not applicable
Tetrasodium pyrophosphate (Na <sub>4</sub> P <sub>2</sub> O <sub>7</sub> )	Colorant/ Opacifier	(EU) 231/2012	E 450(iii)
Trisodium phosphate (Na <sub>3</sub> PO <sub>4</sub> )	Colorant/ Opacifier	(EU) 231/2012	E 339(iii)

- As per Regulation (EU) 1333/2008** both salts are food additives authorised for use in food category 17.1 (food supplements)
- Viewing their functionality to impart colour or opacity, as per **Regulation (EU) 1169/2011**, on the consumer label they should be referenced as 'colour (salt name or E-number)

For more information, or to request a sample, please call **+33 389 205725**, email [solutions.emea@lonza.com](mailto:solutions.emea@lonza.com) or contact your Lonza Capsules & Health Ingredients sales representative.

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