

THINK INNOVATION:
SEALED, LIQUID-FILLED TWO-PIECE CAPSULES





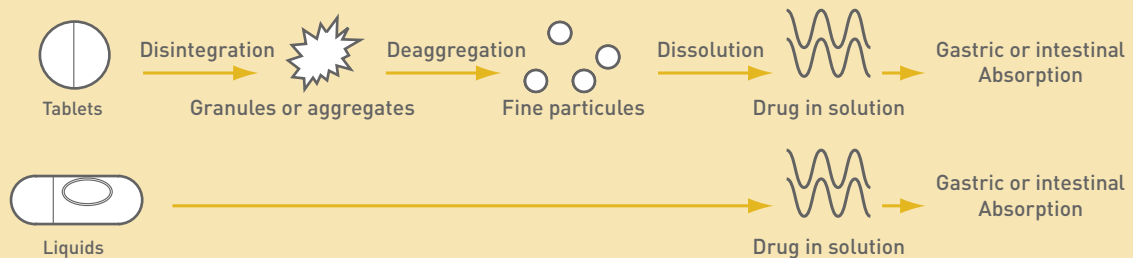
LICAPS® PRESENTATION

In today's increasingly crowded marketplace, Licaps® liquid-filled two-piece capsules offer exciting new opportunities that can give your business that vital competitive edge.

- Licaps® and their patented LEMS™ sealing process are a uniquely innovative way of delivering pharmaceutical and health supplement products.
- Visually appealing and fast acting, Licaps® are the preferred choice of 3 out of 4 consumers*.
- Scientific studies have proved that liquid formulations offer enhanced absorption.
- Reflecting the growing trends of today dietary supplements market, the Licaps® formulations list gives faster time to market and is a highly effective sales driver.

Liquid Formulation Benefits over Powder

Oral absorption summary**:



* Capsugel Consumer Research • **L.Z. Benet, Biopharmaceutics as a basis for the design of drug products, 1973



LEMS™ SEALING TECHNOLOGY

No banding needed

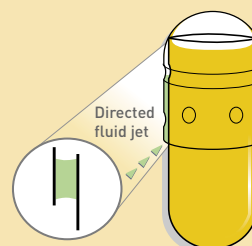
Capsugel's exclusive LEMS™ - Liquid Encapsulation Microspray Sealing - technology provides secure sealing of the capsules, eliminating the need for banding and maximising seal integrity to prevent liquids leakage.



The Licaps® sealed area is about 8 times larger than the banded area on conventional liquid-filled capsules.

An innovative sealing technology

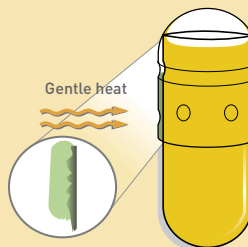
**Stage 1
Spraying**
Sealing fluid is sprayed onto joint between cap and body.



Magnified

Capilarity action draws fluid up between the cap and the body. Suction removes excess fluid.

**Stage 2
Warming**
A gentle heat application completes melting and fusion.



Magnified

Gentle heat melts the two gelatin layers, which fuse together to form an impervious seal.

**Stage 3
Setting**
Gelatin sets and hardens at room temperature.



LICAPS® RANGE



Licaps® come in both hard gelatine and HPMC vegetarian form.

Licaps® gelatine

Licaps® gelatine capsules are geared to today's formulation and lifestyle requirements. They are highly suitable for liquid fills, as well as oil-based, semi-solid and hot melt (up to 40°C) liquid forms.

Licaps® HPMC

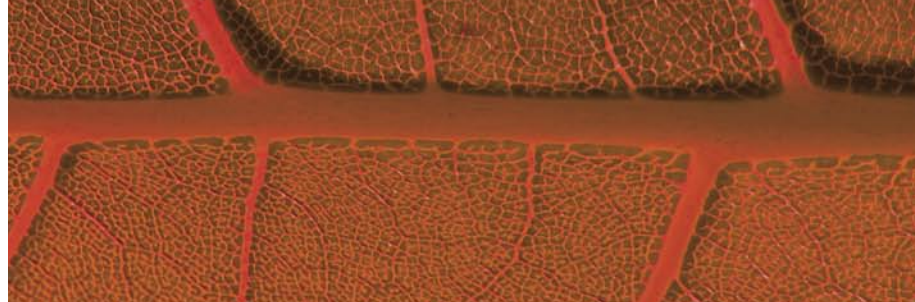
Licaps® HPMC (Hydroxypropylmethylcellulose) capsules are versatile, highly stable containers, ideal for delivering semi-solid and high viscosity liquid dosages to the fast-growing vegetarian market.

Licaps® HPMC opening up new horizons:

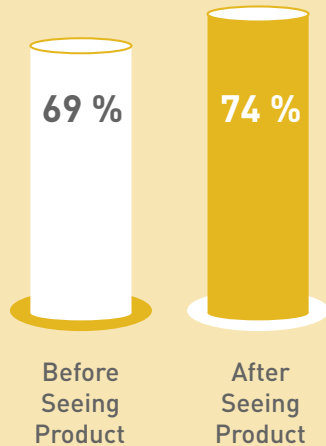
- Empty Licaps® HPMC are clean label capsules - IP, solvent free, preservative free, gluten free, starch free, plasticizer free and allergen free.
- Licaps® HPMC are highly stable, non-cross-linking capsules. Their advanced technical characteristics mean that, unlike other vegetarian containers, they can encapsulate complex formulations such as artichoke and L-Carnitine.
- Licaps® HPMC are ideal for hygroscopic ingredients.
- Licaps® HPMC are suitable for Kosher, Halal and vegetarian dietary and cultural needs.



LICAPS® ADVANTAGES



Most consumers want to buy Licaps®



Why consumer prefer Licaps®?*

- 1- "Easy to swallow/ Goes down smoothly"
- 2- "Works/ Absorbs fast"
- 3- "Gentle on the stomach/ Easier to digest"

*Capsugel Consumer Research

Consumer advantages

Licaps® are an exceptionally flexible system, offering key advantages for driving consumer loyalty:

- Easy to swallow, even for people who have difficulty swallowing.
- With their high visual appeal, consumers consider liquid dosage forms to be gentle on the stomach and fast acting.
- No unpleasant aftertaste or odour - a significant advantage for a number of top-selling products.
- Empty Licaps® capsules meet natural clean label considerations: IP, solvent free, preservative free, gluten free, starch free, plasticizer free, allergen free.



LICAPS® ADVANTAGES



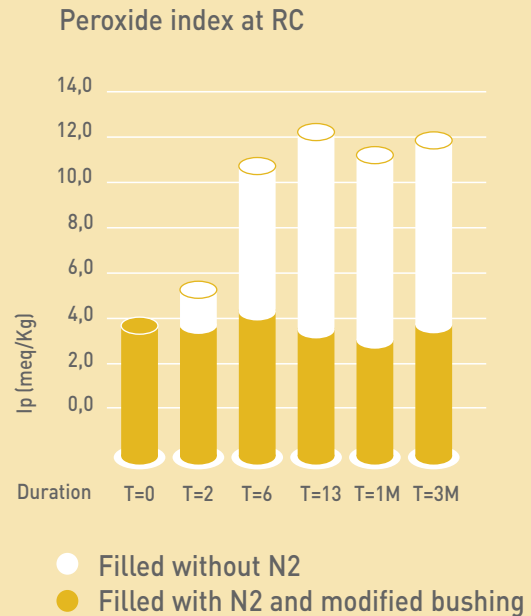
Manufacturer advantages

Licaps® are highly versatile products offering a range of benefits that can give health supplement manufacturers a crucial competitive edge.

- Use one of our basic formulations for a fast time to market or let us help you customize your own product.
- Licaps® are versatile products that can accommodate a wide range of formulations of varying viscosities, including suspensions and herbal extracts.
- A nitrogen flush applied during the filling process improves ingredient stability for oxygen sensitive products.
- Licaps® are pharmaceutical-quality products produced in Capsugel's Colmar plant, a pharmaceutical manufacturing site that meets all current Good Manufacturing Practices.

Licaps® technical features

A nitrogen flush is used to improve stability



Beyond the product

Capsugel® provides support for:

- **Technical aspect:** formulation support, raw material sourcing, quality and compatibility testing.
- **Marketing:** co-branding, graphical identity library, etc.
- **Regulation:** Capsugel can answer your questions about the EU's changing regulations on food supplements.
- **Ready to market formulations:** ask our Licaps® formulation list for a fast time to market.

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Capsugel®

With nine global manufacturing facilities, Capsugel is a world-leading capsule manufacturer and produces over 50% of all two-piece capsules sold globally. High-quality Capsugel products perfectly match the stringent requirements of major pharmaceutical companies as well as dietary supplement manufacturers and marketers.

Licaps® are a result of Capsugel's experience in hard capsules and are highly innovative products that add a new level of excitement to the capsule dosage form. More than capsules, Capsugel manufactures also capsule filling and sealing equipment.

CAPSUGEL®
Quality
People and Products Working Together

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