

Sealing your success

Liquid delivery 101: why forward-thinking supplement brands are moving beyond softgels



A clearer picture of liquid delivery: hard capsules vs. softgels

Liquid supplement formulations hold enormous potential—faster absorption, higher bioavailability, and a more premium consumer experience. Yet, concerns over ingredient stability, oxidation, leaks, and the complexity of scaling from concept to commercial reality can hold back innovation in this space.

While softgels have become the default format for the job, liquid-filled hard capsules can offer an effective solution, helping brands bring more innovative, differentiated products to market—faster and with greater confidence.

To help brands make the most informed choice—and one that's right for their formula and their target consumers—we've compared the key decision factors between liquid-filled hard empty capsules and softgels:

Decision factor	Liquid-filled hard capsules		Softgels	
Moisture-sensitive ingredients	✓	Lower inherent shell moisture can support sensitive actives	✗	Higher shell moisture can be problematic for hygroscopic fills
Formulation flexibility	✓	Flexible for a wide range of fills, including combination fills, high-viscosity oils and certain water-based, hygroscopic, or hydrophilic ingredients not possible in softgels	⚠	Highly versatile for lipids and self-emulsifying systems; some limitations with very hygroscopic or high-melting fills
Performance in heat and humidity	✓	Hard-capsule structure can tolerate higher fill temperatures	✗	More sensitive to temperature and humidity (e.g., risk of sticking/softening)
Seal integrity and leak resistance	↻	Depends on sealing approach. Certain capsules, like Lonza Capsugel's Licaps® liquid-filled capsules, are spray sealed to prevent leaks	↻	Leak risk depends on shell formulation and process control
Oxidation protection	↻	Licaps® liquid-filled capsules use a nitrogen flushing technique to deplete oxygen	↻	Protection depends on shell design and packaging
Cleaner formulations	✓	No added plasticizers in the capsule shell	✗	Contain additional substances (plasticizers and stabilizers) to maintain their structure
Premium aesthetics	✓	Visible liquid supports premium look and feel	⚠	Familiar format, but often less visually distinctive
Manufacturing complexity and scalability	✓	Simpler route from concept to scalable reality with the right partner	⚠	More integrated process with drying steps; can add time/complexity

Legend: ✓ Advantage; ✗ Limitation; ⚠ Potential risk; ↻ Depends

Licaps® capsules: liquid formulations, made simple

While the advantages of liquid-filled capsules over softgels are clear, achieving excellent ingredient protection, stability, and shelf performance depends on capsule choice—the technology behind the seal, the science inside the shell, and the expertise of the partner who makes it all possible. That's where Lonza Capsugel's Licaps® liquid-filled capsules come in.

Powered by proprietary band-free LEMS® (Liquid Encapsulation Microspray Sealing) technology and a nitrogen bubble infusion process, Licaps® capsules set a new benchmark for what simple liquid-filled hard capsules can achieve.

Licaps® liquid-filled capsules enable formulators to tackle simple liquid fill challenges with confidence, offering excellent ingredient protection and stability versus softgels. This gives brands the freedom to build more premium, differentiated products, diversify their portfolios, deliver better consumer experiences and unlock new market opportunities.

Technology you can trust

- ✓ **Engineered to prevent leaks**—patented LEMS® fusion sealing technology creates a wider, band-free seal zone, delivering stronger leak resistance than conventional banding.
- ✓ **Built to protect what's inside**—nitrogen bubble infusion process displaces oxygen from within the capsule before sealing, providing excellent protection for oxidation-sensitive and high-value ingredients.
- ✓ **Proven shelf performance**—together, these technologies deliver enhanced capsule integrity and shelf-life, reducing the risk of degradation and reinforcing consumer trust.

Capsules designed with consumers in mind



Cleaner credentials

No plasticizers in the capsule shell, supporting a simpler ingredient list.



Premium visual appeal

Transparent capsule puts the liquid on show, signaling quality, care, and a premium feel that resonates with consumer lifestyle aesthetics and drives shareability on social media.



Inclusive by design

Plant-based liquid capsule options available to meet growing vegan and vegetarian consumer demand.



Partner with Lonza Capsugel

Pioneers in premium liquid protection

Liquid formulation is complex. But with nearly two decades of liquid-capsule expertise, we understand the challenges inside and out. We can help supplement brands solve the formulation problems that may have previously sent others to softgels: unstable ingredients, high-viscosity oils, hygroscopic fills, oxidation risk. And we can bring those products to market—reliably, efficiently, and at scale.

With Licaps® liquid-filled capsules, you get more than a capsule. You get:

- ✓ **Hands-on support**—from early formulation through to scalable manufacturing.
- ✓ **Faster routes to market**—streamlined development versus the complexity of softgel production.
- ✓ **Technical confidence**—backed by proprietary LEMS® sealing and nitrogen infusion technology.

Need inspiration?

Licaps® liquid-filled capsules could help you create impactful ingredient stacks for holistic health demands:

- Bone health, heart health, and immune health with **liposomal Vitamin D3 and K2**.
- Liver function and brain health with **choline chloride**.



Ready to take the next step in liquid delivery?

Connect with Lonza Capsugel to explore how Licaps® liquid-filled capsules can help you elevate your next simple liquid formulation—so you can move from idea to scalable reality with confidence.



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