



Where science  
& creativity meet

# DISCOVER THE SEAGEL<sup>®</sup> SECRET OF SOFTGEL FORMULATION



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## The Rise of Plant-based

**A revolution is underway in markets, restaurants and family dining tables around the world. More people than ever before are including meat-free and plant-based options in their diets, driving an unprecedented rise in people who identify as “vegetarian” and “vegan.”**

While diets limiting or excluding meat, dairy and eggs used to be on the fringe, today they are becoming mainstream:

- In the U.S., there was a 600% increase in people identifying as vegans between 2015 and 2018. A report by research firm GlobalData showed that only 1% of U.S. consumers claimed to be vegan in 2014 compared to 6% in 2017.
- The UK has shown similar exponential growth as the number of people identifying as vegans has risen 350% in the last decade.<sup>1</sup>
- Google Trends search data<sup>2</sup> shows a global surge in the interest in veganism from 2004 to 2018 in regions such as Israel, Australia, Canada, Austria, and New Zealand.

Plant-based options are becoming more important to consumers in the nutraceutical and pharmaceutical realms, too. Vegetarians and vegans are opposed to ingesting gelatin capsules that use animal byproducts. As soft capsule manufacturers search for viable solutions, IFF is on the forefront of the plant-based movement and has developed SeaGel® Soft Capsule Technology.

## A Natural Alternative

**SeaGel® is a plant-based alternative to gelatin in the production of softgel capsules. Naturally derived from non-animal sources, our SeaGel® technology helps deliver the highest quality vegetarian softgel capsules.**

SeaGel® technology is easy to use, versatile and proven effective. It has the ability to maintain structural integrity under high temperatures and can deliver a pure, superior quality end product, time after time.

Our relentless innovation has advanced the use of plant-based sources for capsules and brought about one of the most advanced technologies in the industry. When you combine our knowledge of plant-based science with a commitment to customer success, you get the clear choice for a better and more reliable, sustainable soft capsule technology.

<sup>1</sup> Vegan Society in partnership with Vegan Life magazine - <https://www.ipsos.com/ipsos-mori/en-uk/vegan-society-poll>

<sup>2</sup> Google Trends search data: [https://trends.google.com/trends/explore?date=all&q=%2Fm%2F07\\_hy](https://trends.google.com/trends/explore?date=all&q=%2Fm%2F07_hy)



# SEAGEL® - A PLANT-BASED, VERSATILE SOFT CAPSULE TECHNOLOGY WITH A PROVEN TRACK RECORD OF MORE THAN A DECADE OF GLOBAL USE

## Production Rate

Up to 1.5 times faster with SeaGel® compared to other veggie systems; > 4 RPM realized in commercial scale production

## Yield

SeaGel® allows up to 25 % higher yield vs other veggie systems when used on same manufacturing equipment

## Superior Production Efficiency

SeaGel® allows industry standard capsule die pockets whereas other veggie technologies can yield in 25% lower efficiency due to oversized capsule pockets needed to minimize internal pressures

## Easy to Adopt

Direct access to plant-based soft capsule technology allowing to produce in-house and using existing equipment with minimal adjustments

## Superior Quality

Excellent sealing performance due to strong heat-sealed soft capsules yields in < 2% leakers even at high RPM

## Outstanding Film Properties

No limitations in capsules size and shape due outstanding film strength and elasticity; SeaGel® enables 90 - 100% fills vs. < 70% for other veggie soft capsules



# SEAGEL® CAPABILITIES



**Increase your capabilities with the range of capsule colors, sizes and shapes available with SeaGel®.**

The superior appearance of SeaGel® capsules represents the naturally derived ingredients.



**SeaGel® technology is heat stable and pH neutral.**

SeaGel® capsules maintain structural integrity under higher temperatures than gelatin-based capsules. That means they won't deform or agglomerate. They're also easier to transport and maintain a longer shelf life.



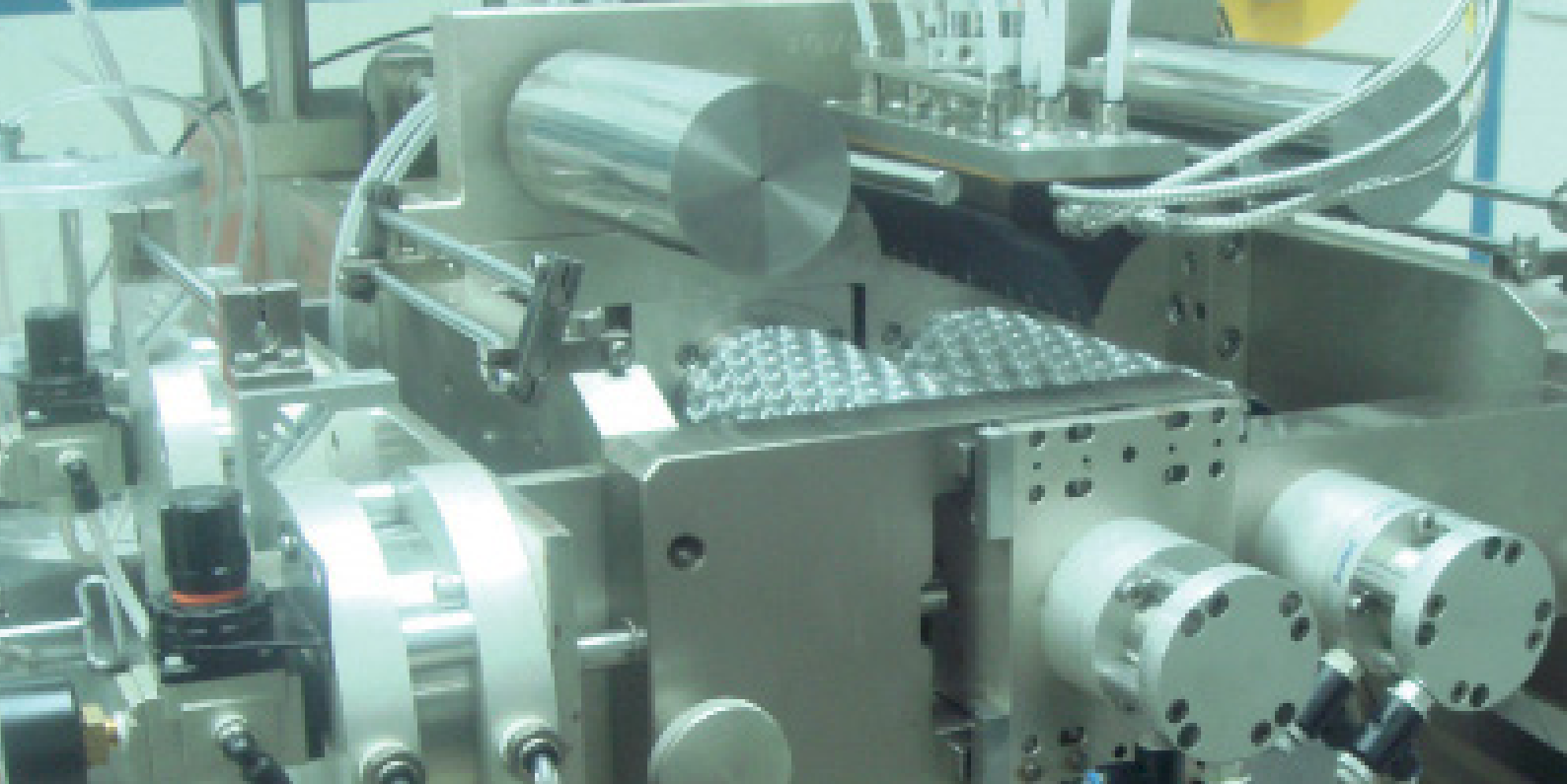
**SeaGel® technology is plant-based and naturally derived.**

SeaGel® technology can accommodate a wide range of diets and lifestyles. It's vegetarian, Halal, Kosher and non-GMO.



**SeaGel® technology is eco-friendly and entirely sustainable.**

To create SeaGel® soft capsules, we naturally source our materials from renewable resources.



## Our Technology is in Your Control

**Get big change in capsule technology without spending much coin.**

SeaGel® technology is easily adaptable to existing gelatin operations, so it requires minimum changes in your process to allow you making superior quality plant-based soft capsules in efficient processes second to none.

**SeaGel® technology installed in-house, to your specifications.**

IFF experts will be there throughout the adaptation process helping you to successfully make SeaGel®-based vegetarian capsules. Using our SeaGel® technology in-house enables you to meet your specifications, supported by the experience and expertise of IFF. We'll deliver the technology, familiarize you with any equipment changes and guide you through installation and adoption so you can continue to benefit from technology that has been pushed to be the best it can.

**Technology as flexible as your business needs it to be.**

Consumer preferences grow and change, and capsule markets demand a technology that can grow and change with them. SeaGel® gives you the ability to adapt to many brand strategies, take on any shape and clearly present many colors.

**IFF is your partner in success.**

We take pride in listening closely to your specific needs and working to identify additional improvements that will guarantee continued success. Everything we do is informed by your vital feedback and supported by extensive research.

# SEAGEL® TECHNOLOGY: A STRONGER SOFT CAPSULE

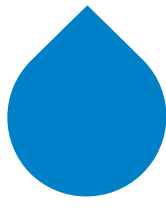
SEAGEL®-BASED CAPSULES  
ARE MADE OF THREE SIMPLE  
INGREDIENTS



Naturally sourced SeaGel®



Glycerin

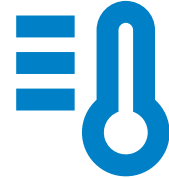


Water

WHAT MADE SEAGEL® BRAND  
THE GO-TO SOFT  
TECHNOLOGY FOR CAPSULES?



It's made of  
naturally derived,  
carefully sourced  
ingredients



Its reliable  
structural integrity,  
even at high  
temperatures



The guidance of IFF experts,  
innovators in plant-based and  
capsule technologies

SEAGEL® SOFT CAPSULES ARE 100% ANIMAL BYPRODUCT FREE, UNLIKE GELATIN-BASED TECHNOLOGY.  
SEAGEL® SOFT CAPSULES ARE NON GMO, SAFE FOR VEGETARIAN, KOSHER AND HALAL LIFESTYLES.

Proven safe for use in food & pharma products by the USDA, our plant-based and naturally derived ingredients have long been the go-to sources for innovation in softgel technology.

IFF PROVIDES ITS SEAGEL® TECHNOLOGY TO  
PARTNERS WHO BENEFIT FROM OUR

## 75 YEARS

WORTH OF EXPERTISE IN PLANT-BASED  
TECHNOLOGIES.

# SEAGEL<sup>®</sup> BENEFITS



- Addresses the needs of vegetarians and vegans who are opposed to ingesting gelatin-based soft capsules.
- Naturally derived from non-animal sources.
- Enhances consumer safety preferences by allowing non-GMO, vegan, vegetarian, Halal, Kosher and clean label.
- Adaptable to many brand strategies, including the ability to allow for different shapes and printing.
- Technology is easy to use, versatile and proven effective.
- Maintains structural integrity under high temperatures.
- Sustainably sourced from non-GMO, plant-based resources.



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