SPRAY-TEK

ADVANCING THE PLANT BASED FLAVOR DELIVERY SYSTEM

WHITE PAPER

SPRAY-TEK'S PATENTED INNOVATION IN ENCAPSULATION

spray-tek.com

Introduction

Flavor isn't just taste—it's aroma, release timing, and consistency across every bite or use. But achieving that full sensory experience—especially in clean-label and plant-based products—has been one of the toughest challenges in food, nutrition, and personal care formulation. Spray-Tek's newly granted U.S. Patent No. 12,302,933 B2 changes that. This plant based flavor delivery system leverages spray drying to create highly functional prills and pastilles that encapsulate flavor oils within a plant-derived matrix. The result: flavor systems that are cleaner, more stable, and tailored for modern formulations.

The Formulation Challenge: Flavor That Performs

Formulators across food, beverage, and personal care industries often face these persistent challenges:

- Flavor instability during processing and shelf life
- Inconsistent release that impacts user experience
- Label constraints tied to synthetic ingredients or animal-derived components

Consumers expect better—and Spray-Tek's new patent gives brands the tools to deliver.

How the Spray-Tek Patented System Works

The patented composition includes:

- A flavor oil
- A plant-derived fat
- A plant-derived wax
- A plant-derived surfactant
- (Optional) an antioxidant for added stability

These components are combined using spray drying to form solid, encapsulated prills or pastilles that are highly dispersible and compatible across a range of product formats.

Functional Benefits

- Controlled release: Enhanced aroma during cooking, flavor during consumption
- Flavor integrity: Homogeneity throughout the final product
- Stability: Shelf life protection through encapsulation
- Clean-label alignment: Entirely plant-based matrix
- Versatile format: Dry powders or water-dispersible particles

Real-World Applications

This patent unlocks new possibilities across:

- Powdered and fluid food products
- Nutritional supplements and performance nutrition
- Savory and plant-based foods
- Bakery dough and noodle bowls
- Personal and oral care products
- Dairy and alternative dairy
- Flavor-masking in complex formulations

The Science in Action

“This patent captures the intersection of four key attributes that define the ideal consumer experience,” said Jiten Dihora, Chief Technology Officer at Spray-Tek. “Aroma of the flavor during cooking, flavor during consumption, homogeneity of the flavor throughout the final product, and the use of plant-based materials.”

Strengthening Our Edge

“Receiving our 14th U.S. patent marks another important milestone for Spray-Tek and reinforces our leadership in encapsulation,” added Raymond Rambowski, CEO. “This innovation equips our partners with plant-based, functional flavor delivery systems that are cleaner, more stable, and engineered for next-generation formulations.”

Conclusion

Spray-Tek's plant-based flavor delivery system represents a practical advancement in both spray drying and microencapsulation. It empowers R&D teams to improve sensory performance, meet clean-label expectations, and innovate across a wide range of product categories. Backed by patented protection and decades of expertise, this system opens the door to smarter, more sustainable formulation.

Partner With Spray-Tek

At Spray-Tek, we don't just offer contract manufacturing—we bring patented technologies, deep formulation expertise, and a problem-solving mindset to every partnership. Our plant-based flavor delivery system is just one example of how we help brands move faster, cleaner, and more effectively from concept to commercialization.
Whether you're developing a new functional food, optimizing a nutritional supplement, or upgrading flavor stability in an existing product, we'll work with your team to design a solution that meets performance goals, regulatory needs, and consumer expectations.

Why partner with us:

- Access to patented encapsulation technologies
- End-to-end support from R&D through scale-up
- Flexible production formats including prills, powders, and pastilles
- A proven track record in clean-label and plant-based innovation

Ready to bring your next innovation to market? **Contact us** to explore how we can help.