

Solving the hidden costs of ingredient complexity

How agile CMOs streamline operations, cut costs, and fast-track innovation with advanced Premix solutions

Premix solutions | Advanced powder technology

Technical and process optimization

dsm-firmenich takes you beyond ingredients to custom premixes.

As your end-to-end partner, we help you co-develop desirable and sustainable science-backed solutions to support you from concept to launch.

Together elevating health.

Turn technical and process complexity into manufacturing confidence

For CMOs, manufacturing performance is defined at the formulation stage. Even small inconsistencies in ingredient compatibility, uniformity, or flowability, can create production bottlenecks and put pressure on timelines.

Trying to solve these challenges step by step within production often adds complexity.

That's why dsm-firmenich goes beyond just ingredients. Our premix solutions integrate formulation expertise, proprietary technology toolbox, and a problem-solving mindset, to take on your toughest formulation challenges. All to improve processability, enhance manufacturing efficiency, and help prevent production issues before they escalate.

Press without capping

Tablet capping often stems from a poorly balanced powder composition—like incompatible excipients, uneven particle sizes, or wrong moisture levels—which undermines compressibility and causes tablets to split during pressing.

"Our ready-to-press formulations help to prevent capping."



Problem

Inappropriate drum-to-hopper formulation or poor ingredient selection can lead to reduced tableting performance: This can result in:

- Defects like capping, lamination, friability
- Increased production costs because of rejects
- Inconsistent tablet hardness due to unsuitable tableting parameters.

Solution

We embed advanced powder technologies into premixes—**engineered to optimize flow, compressibility, and cohesion before the tablet press.**

Through a combination of granulation (wet, dry, and melt), microencapsulation, and specialized coating techniques such as film coating, fluid-bed coating, and anti-adhesion layering, we **improve uniformity and mechanical strength during compression; helping to prevent capping, lamination, and powder bleeding.**

Turn technical complexity into manufacturing confidence.

Connect with a dsm-firmenich expert

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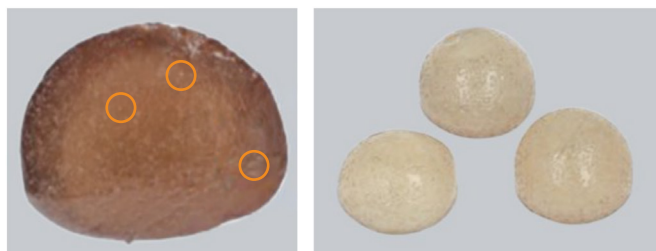
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Preventing spotty gummies

Inappropriate premix formulation can increase oxidation and stability, resulting in poor appearance of end products—including dark spots on gummies—and reduced customer acceptance.

“Color development, along with the appearance of dark spots, caused by unwanted interactions between ingredients.”



Gummies containing iron and vitamin C: color development with unprotected ingredients (left), compared to formulations utilizing dsm-firmenich Advanced Powder Technologies (right).

Problem

If ingredients are not properly protected through encapsulation or spray-drying, they are prone to oxidation initiated by other ingredients or unfavorable storage conditions. This may cause gummies to develop a brownish color and visible black spots.

Solution

We use **proprietary forms of spray-dried and coated vitamins and minerals** to reduce negative interactions during gummy processing.

Furthermore, we can help choose the right ingredient forms to keep gummies colorless, giving customers the **freedom to pick any color that matches their target flavor**.

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Premix solutions | Streamline your business

Reduce cost and complexity

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Simplify supply chain complexity and improve manufacturing efficiency

Maintaining agile operations depends on supply chain simplicity. For CMOs who deal with hundreds of individual raw materials, high minimum order quantities, and intensive pre-work like weighing and batching, internal resource drain and expensive material write-offs are all too common.

Managing these inventory burdens on an ingredient-by-ingredient basis often results in persistent operational bottlenecks too.

dsm-firmenich can help simplify operations, improve efficiencies, and cut production costs by up to 20%. Discover our high-performance modular and turnkey premix solutions—completely tailored to your needs.

Unlock capacity & optimize costs

Managing multiple straight ingredients creates unnecessary complexity that poses significant operational challenges and compromises manufacturing and business outcomes.

“Our premix powder solutions simplify operations, improve quality, and enhance manufacturing efficiency.”

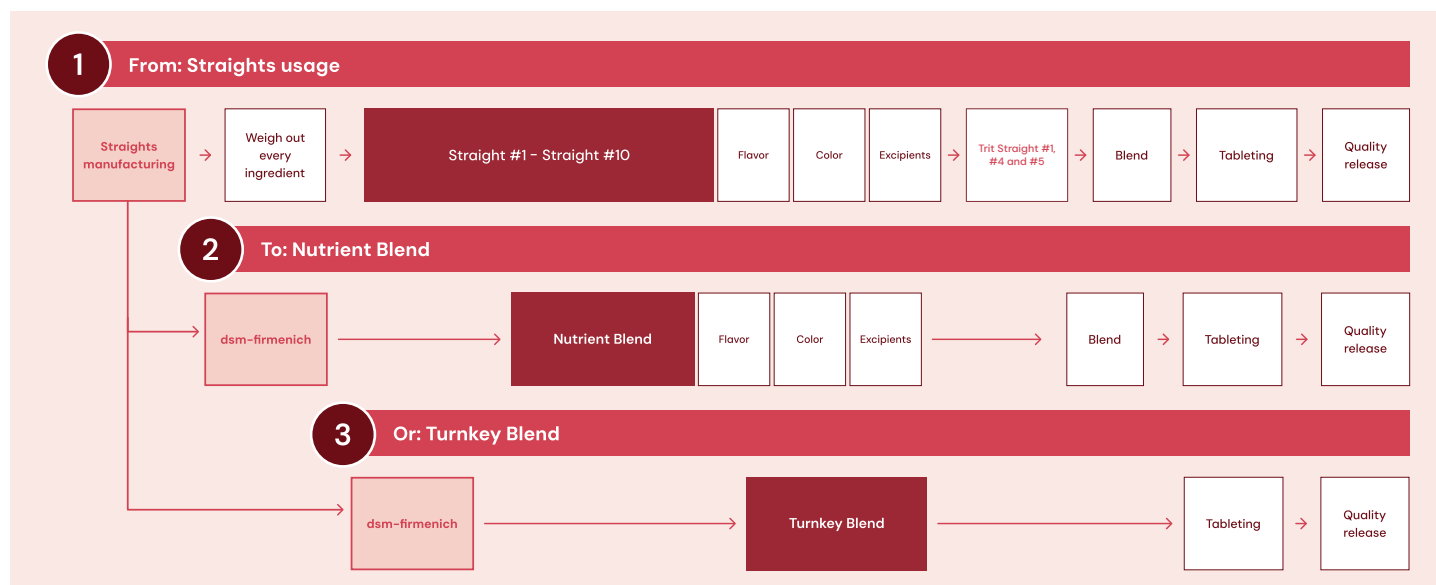
Problem

Using multiple straight ingredients can create quality variations, require excessive testing, and result in operational inefficiencies and inventory challenges. This impacts both cost and performance.

Solution

From simple triturations to a turnkey blends, dsm-firmenich premix solutions can help reduce value chain complexity and increase efficiency while reducing operational costs up to -20%*.

*Maximum reduction observed from dsm-firmenich assessment. Total savings in the past 12 months (DS application). Reduction depends on formula complexity and annual volume.



Unlock operational agility with tailored premix blends.

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Premix solutions | Advanced powder technology

Health benefit innovation

dsm-firmenich takes you beyond ingredients to custom premixes.

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Together elevating health.

Unlock faster innovation with smarter premixes

To thrive today and in the future, CMOs must evolve into preferred innovation partners capable of delivering science-backed health products that perform in the real world. Yet trendy ingredients frequently introduce significant sensory and stability hurdles.

dsm-firmenich brings the technical expertise in a multi-strategy approach to turn this challenge into new opportunities.

How? We combine premium functional ingredients with advanced blocking, masking, and stability technologies within our premix solution. This helps CMOs accelerate formulation cycles and reduce time to market, enabling confident expansion into new categories with high-dose, great-tasting products that stand out in competitive spaces.

Ultra-high omega-3 gummies made possible

Delivering **700 mg total omega-3 per serving** in a gummy format is exceptionally challenging due to extreme oxidation risk, lipid instability, texture disruption, and strong off-notes—especially in reduced-sugar systems.

“This breakthrough combination demonstrates our ability to push omega-3 loading far beyond traditional gummy limits”

Problem

High doses of algal omega-3s rapidly oxidize, generate strong marine and fatty off-notes, and destabilize gummy structure—making ultra-high omega-3 delivery in gummies historically impractical.

Solution

We combined a **patented AOX Premix, robust flavor and masking technologies** and **advanced pectin system** design to successfully deliver 700 mg total omega-3 in just 3 gummies.

- Patented AOX PMX to protect against oxidation
- Advanced flavor creation and targeted masking
- Pectin expertise to stabilize high lipid loads

We enable **stable, great-tasting, ultra-high-potency omega-3 gummies**, redefining what's possible in the gummy platform.



Supplement Facts

Serving Size 3 gummies (13.5 g)

	Amount per serving	% Daily Value
Calories	40	
Total Fat	1 g	1%*
Total Carbohydrate	8 g	3%*
Protein	1 g	
Sodium	40 mg	2%
Omega 3 Fatty Acid (as triglycerides from algal source)	700 mg	**
DHA (docosahexaenoic acid from algal source)	600 mg	**

*Percent Daily Values are based on a 2,000 calorie diet.

**Daily Value not established.

Step up your innovation journey with expert premix solutions.

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Bitter-free oral formulations

Certain vitamins and active ingredients can create taste challenges—including bitterness, metallic, or astringent aftertastes, and unpleasant odors—which can intensify at higher concentrations.

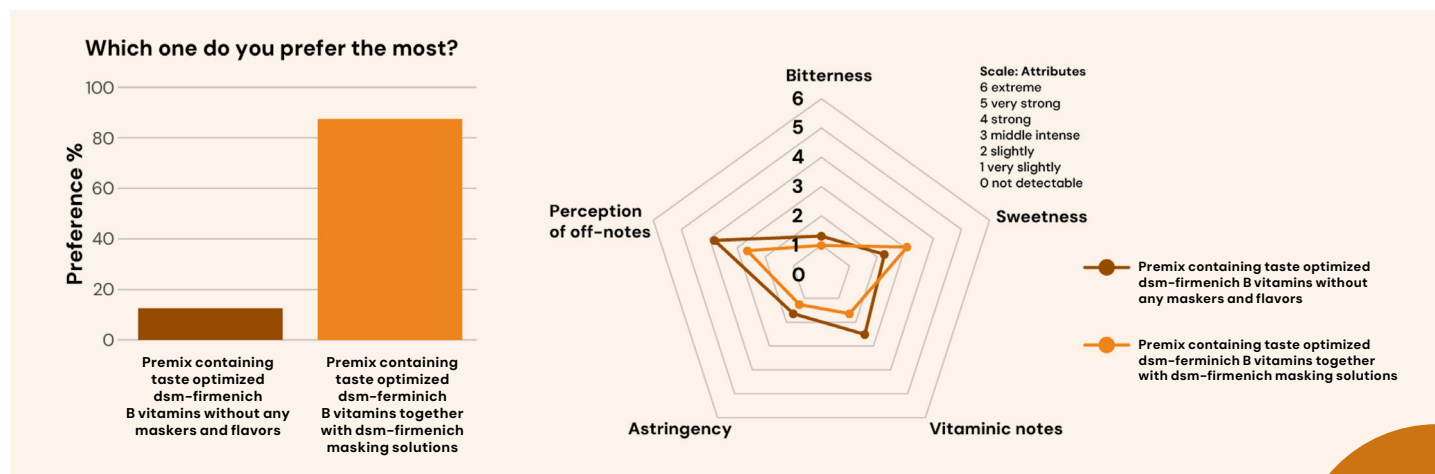
“Higher consumer preference can be achieved with our expertise and technologies.”

Problem

B vitamins are well absorbed orally, but their strong bitterness continues to pose challenges for oral formulations, even with modern taste-masking technologies.

Solution

Our advanced masking solutions make it possible to **deliver high-dose B vitamins in convenient formats such as stick packs and chewables**—previously only feasible in tablet form. This way, we can make consumption of high-dose supplements easier and more pleasant.



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Smarter blending for manufacturing precision

Relying on individual raw materials often adds layers of logistical friction and technical risk. By unifying select nutrients and flavors into a single, high-performance blend, we help you overcome the toughest formulation hurdles while freeing up precious capacity to move faster and with greater agility.

Experience true freedom to innovate. Our customized, end-to-end Premix Solutions integrate deep technical expertise with advanced powder technologies to simplify your value chain and improve operational efficiency from the start.

Ready to streamline your business and fuel your consumers' highest health ambitions?

Connect with an expert

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