



who power lifts
your brand?

—
we do.

health and wellness overview guide



ashland.com / efficacy usability allure integrity profitability™

who boosts your
body's biome?
—
we do.



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the 5 effects™

Our approach is not just one dimensional. We strive to make our solutions successful from multiple perspectives. We call these the 5 effects. Here are just a few examples of the 5 effects in action:

allure

enhanced consumer appeal

Our film coatings improve tablet appearance and can mask undesirable flavors. Looking for titanium free options? We have those too.

efficacy

improved manufacturability

Our particle engineering experts can improve the flow characteristics of your powdered ingredients.

profitability

better value

Our formulation expertise can bring your product concept to life and help deliver a winning product for your customers.

integrity

trusted quality

We are dedicated to producing at the highest quality standards. We offer products with Organic, NSF, NSF Sport, cGMP, Kosher and Halal certifications.

usability

improve ease of use

With our drum to hopper (D2H) approach, you can minimize handling and reduce raw material inventory headaches.

always solving™

transformative solutions

We are solvers driven by a vision to make a better world by providing creative solutions through the application of specialty ingredients and technologies. Ashland has forged a global health and wellness business, with the people and expertise needed to answer the most complex challenges for the health-conscious consumer.

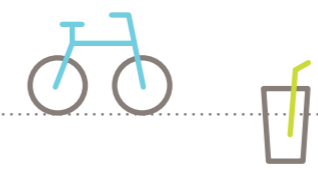
We thrive on pushing the boundaries of what's possible and focus on advancing the competitiveness of our customers across diverse industries.

always solving™

The drive to find ingenious solutions is in every Ashland employee's DNA. No one knows more or cares more about how to transform the efficacy, usability, allure, integrity and profitability of customers' products and applications. We call this the Ashland 5 Effects™. Our portfolio of ingredients is broad – from hydrocolloids and disintegrants to vitamins and weight maintenance products. Our custom processing capabilities and particle engineering knowledge is best in class. The global coverage of Ashland, enhanced by the addition of Pharmachem Laboratories, makes for an unrivaled resource.



who's a natural
at solving?
—
we are.



who does backbends
so you don't have to?
—
we do.



custom workout

New products are the lifeblood of a business. But developing new products takes a lot of blood, sweat and tears. Let our team of solvers help you with your next new product project from start to finish. We will bend over backwards so you don't have to.

concept development

Whether you have a clear roadmap or a fuzzy thought written down on a paper napkin, we can help you build a more robust concept. We'll bring you insights from experts who have been in the industry and know the marketplace. From the start of a project, we partner with you to create a solution precisely tailored to meet your needs.

prototyping and pilot trials

Want to bring your concept to life? Our manufacturing facilities are flexible enough to produce small batches for you to use for evaluating prototypes. Need to test and refine? No problem. We're used to the pursuit of perfection. We are committed to helping our customers get it right.

commercial-scale production

We'll see you through to the end and then some. With multiple plant locations, chances are we have the right facility to match your needs to our capabilities. We have a wide range of processing equipment and scale-up capacities. Do you need drum to hopper for your product? We've got that, too. Our business was built with long-term customer partnerships in mind. That's why we offer spray drying, granulation, agglomeration, roller compaction, extraction, blending and more.

We want our customers to say "Namaste" instead of "Now what?"





the art of particle science

Particle engineering is both art and science. It's not enough to have a piece of equipment, you have to have the know-how that goes along with running the equipment. We've built a solid knowledge base over the forty plus years we have been in business. Our custom approach yields top quality products for our customers.

go with the flow

Do you need your material to flow more smoothly? Dissolve more quickly? Not settle during transit? Our team of superior solvers can analyze your product and manipulate its particles to improve performance.

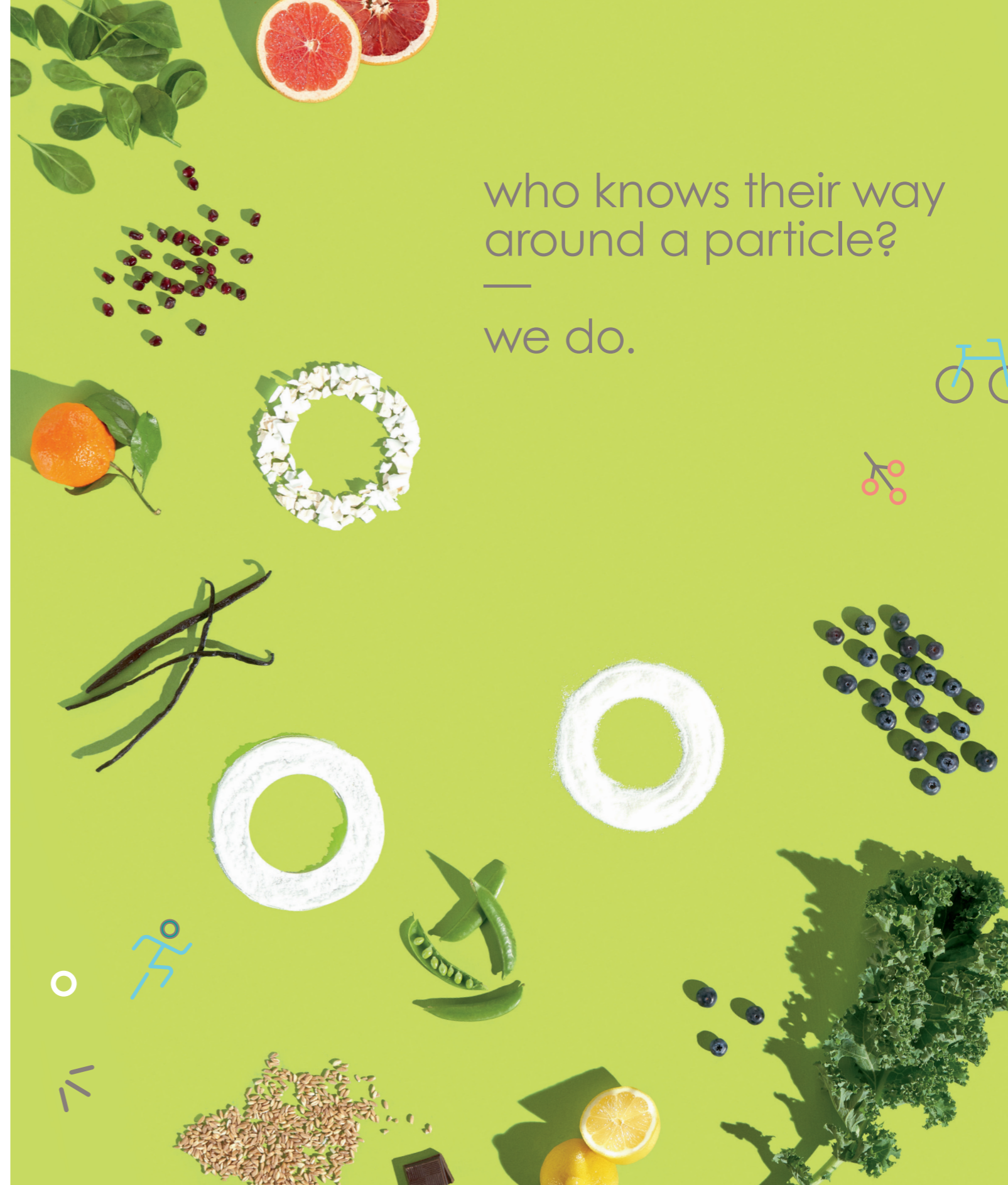
Not sure about composition? We can even change the composition to enhance the solubility, taste and sensory characteristics and deliver a better product.

ready set go

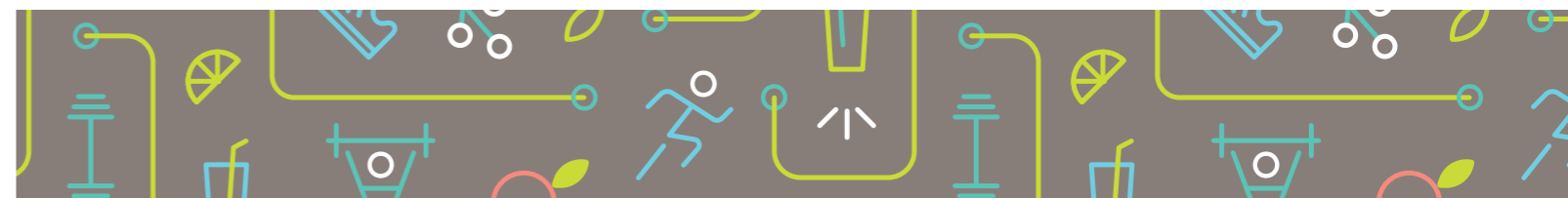
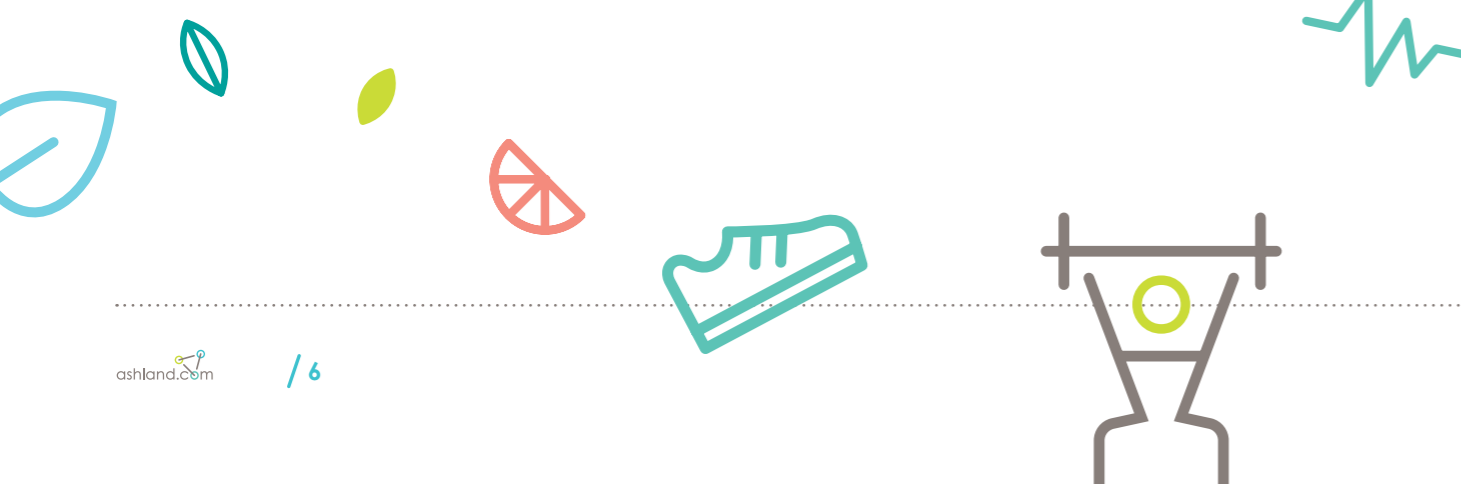
From trial batches to full scale and in any volume, our capabilities extend to drying, milling, micronizing, sizing, blending, coating, instantizing and more for a wide range of product formulations. Few can offer this same breadth of technical capabilities. So ask us about particle engineering, because we have big ideas about little particles.

Come talk to us about:

- specialty granulation bulk ingredient manufacturing
- fluid bed or high-shear granulation
- compounding and processing drum-to-hopper ingredients for various dosage forms
- customized direct compression blends
- microencapsulated bulk ingredients with specific release characteristics
- powders for smaller dosage forms
- drying, milling, sizing, blending, coating and instantizing
- taste masking and flavor development
- roller compaction
- micronization
- particle separation



who knows their way
around a particle?
—
we do.





who has the skinny
on carb control?
—
we do.

who gives you more
than 15 minutes of fame?
—
we do.

proprietary ingredients

What's in a name? Immediate recognition, reassurance of quality, consumer acceptance. We have an award-winning lineup of exceptional health and nutrition brands with names that are standouts in the industry. Our branded ingredients offer solutions for weight management, heart health, joint care and more.

Each of our branded ingredients has achieved trust and recognition for their purity, ingenuity and effectiveness. We own exclusive distribution and marketing rights to the products listed below.

drive consumer allure

phase 2™ carb controller

weight management
ingredient that helps reduce
absorption of starches

celadrin™ esterified fatty acid complex

designed to help support
joint health

cran-max™ extract

whole fruit cranberry extract
to help support a healthy
urinary tract

prenullin™ blend

clinically researched ingredient
to reduce absorption of sucrose
and to help maintain healthy
blood sugar

berry-max™ extracts

whole-berry powders for health
and performance support

perluxan™ hops extract

standardized to help support
joint health

reducol™ phytosterol and phytostanol blend

unique, patented product to help
support cardiovascular health

who's got
you covered?

—
we do.

easy to swallow solutions

We know that tablets can be a pill to work with. That's why our global team of pharmacists, formulators and molecular scientists are eager to help optimize formulations or troubleshoot problems. We have a broad portfolio of polymers to deliver complete solutions and a skilled technical service team to assist you with your tableting needs.

let's wrap

You worked hard to develop the right tablet core. Protect your tablets with a quality, multifunctional coating. Our Aquarius™ film coatings look great and they provide just the right balance of strength, flexibility and opacity. We know you want tablets to look good for the long haul. That's why our film coatings are tested under extreme light, humidity and heat conditions to verify their performance. We have coatings that meet both U.S. and European Union regulatory standards.

Our comprehensive line of colors and coatings including options for

- o custom colors
- o naturally derived colors
- o taste masking
- o organic
- o titanium-free

let's hold it together or pull it apart

If you're looking for better tablet binding, you've come to the right place. We have solutions to help you reduce defects, improve compression performance and minimize use of additives. Want to reduce tablet size? We have specific products for that, too. Our disintegrants are quick to do their job; providing fast dissolving, fast melting, chewable and orally dissolving tablets. And, if you have the time, let's talk about time release.

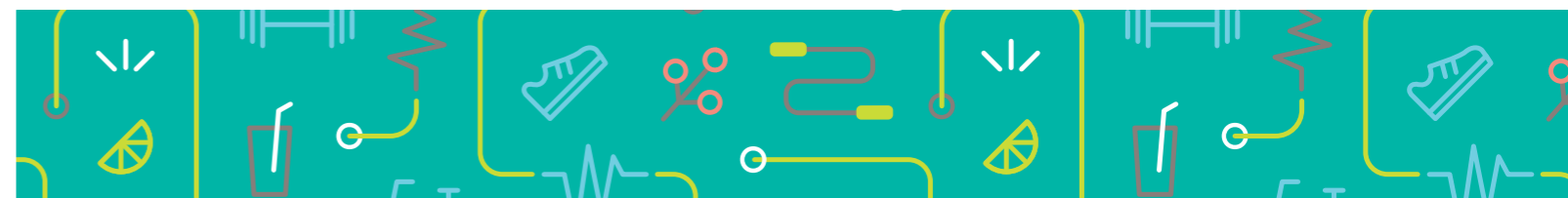
Our market-leading portfolio for nutraceuticals includes:

- o **klucel nutra™** modified cellulose, for tablet binding and modified release
- o **polyp lasdone™** crospovidone disintegrant
- o **benecel™** modified cellulose for modified release



who brings
one-step magic
to your tablet?

—
we do.



wellness all around

The self-directed consumer is looking for ways to incorporate health into all aspects of their life. They are sitting less and walking more. They are consuming less sugar and more fermented products and probiotics. They are thinking about their food in a broader way. Some are concerned about the environment and are reducing consumption of animal proteins and selecting plant-based products. They are concerned about the source of their food and the quality of life of the farmers who grow it. The solvers at Ashland have a variety of product and formulation options that can help you meet the needs of today's health conscious consumers.

Aloe vera

Aloe vera is one of the most on-trend ingredients and Ashland's Aloe vera can meet the requirements of the most discerning customer. To ensure a quality product, we own our own farms and we process the Aloe vera leaves in-house. We practice sustainable farming methods and invest in the local communities. Our Aloe vera is grown organically. It also comes in a range of concentrations and grades for food, nutraceutical beverage and personal care applications.

probiotics

Sometimes you just know in your gut what's right. That's how we feel about probiotics. Every day new research is coming out indicating that gut health influences our overall health. We have teamed up with a leading global producer of probiotics, Probiotal Healthcare Srl., to bring you premium products and cutting-edge knowledge for nutraceutical applications.

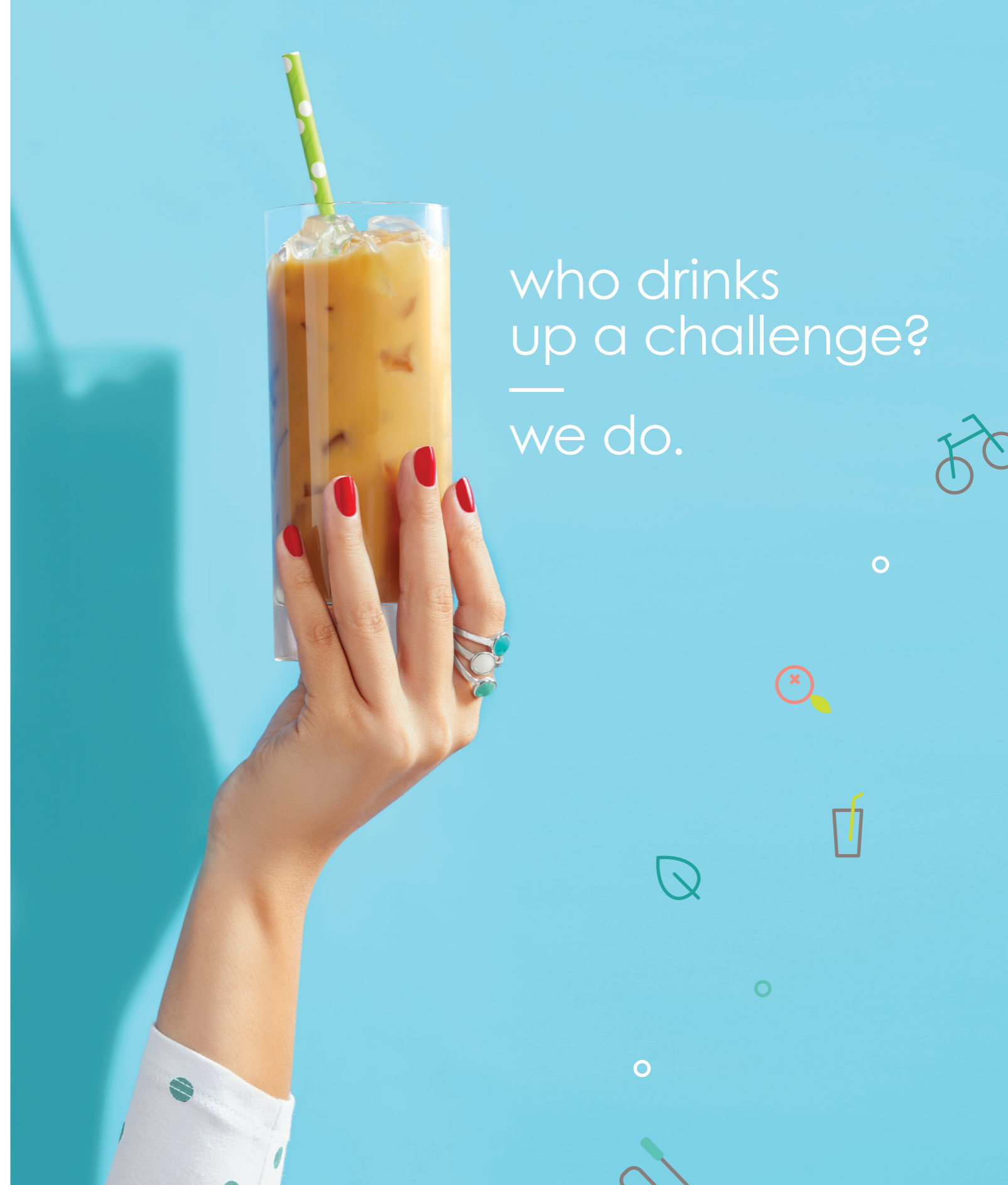


satisfying sugar reduction

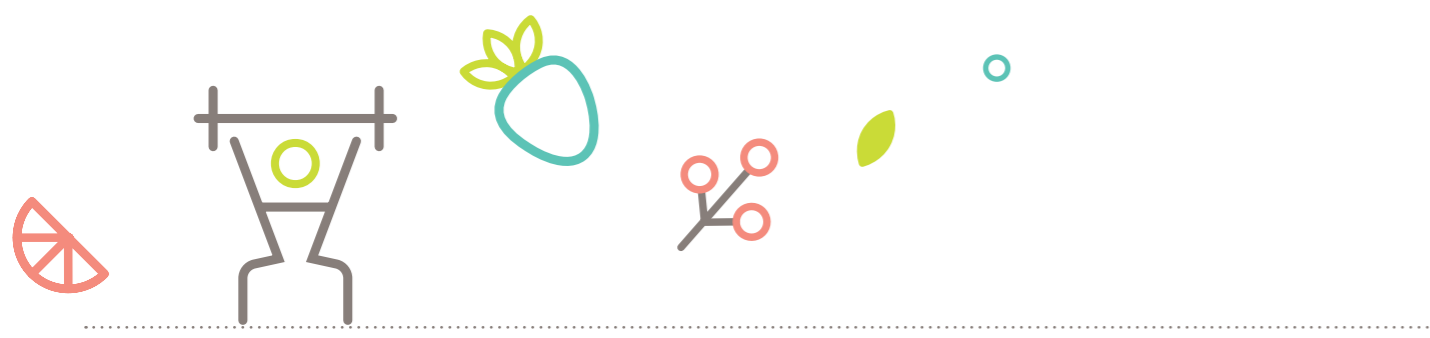
Less sugar does not have to mean less satisfaction. We know how to build back mouthfeel for sugar-reduced beverages for an experience that is closer to full sugar. Let us help you balance your need for better nutrition with the desired consumer experience.

we've got an app for that

We believe functional foods shouldn't be hard to swallow. You can rely on our global team of food scientists and formulators to support a wide array of ingestible applications. Whether you are producing a new application or need help improving a current one, our team can help you create a product your customers will love.



who drinks
up a challenge?
—
we do.





who makes ordinary
extraordinary?

—
we do.

We pride ourselves on bringing our customers a broad range of specialty solutions to some everyday products. Whether you are looking to reduce dusting, meet a label content claim or reduce your tablet size, chances are we have a solution for your product. Our capabilities include custom blending, micronizing, granulating and standardizing. We can work our magic on almost any ingredient to meet your exacting specifications.

sports nutrition

Workout support ingredients including MCT powders, botanical energizers, strength builders and recovery ingredients

amino acids

Premium micronized BCAAs and EAAs, as well as other amino acid compositions and various release technologies, can be micronized and/or instantized for improved dispersibility

immune health

Antioxidants, acerola, carotenoids, botanical and fruit extracts for use in end products that support immune health

bone and joint health

Various forms of calcium salts as well as customized value-added co-granulated glucosamine/chondroitin blends that can provide smaller tablets for improved consumer satisfaction

sweeteners

Value-added granulation and agglomeration of sweeteners such as xylitol, stevia and mannitol

general wellness

Offering a full range of vitamins in powder or granular form as well as mineral triturations, chelates and yeast options

fermented nutrients

A full range of vitamins, minerals and botanicals that are made through a patented process to improve bioavailability



who's got the scoop on contract manufacturing?

we do.



put a lid on it

... and maybe put a scoop in it, too. We have finished packaging solutions for powdered products. From standard lidded jars to flexible pouches and innovative stick packs, we have a variety of packaging solutions.

We support new process development & optimization of ingredients from bench top through commercialization. Whether you're looking to develop a new powder product, or perfect your current one, we have the capabilities to offer a unique one-stop shop for processing turnkey formulations.

Packaging options:

- stick packs
- jars with scoops
- flexible packaging
- direct to mouth powder systems
- food and drink powders
- rigid canisters
- sachets

quality and certifications

We set our standards high and so do you. That's why quality and safety are important to us. From ingredient qualification to running on a manufacturing line, we are focused on providing you the quality assurances and certifications you need.

Here is a partial list of certifications available for many of our products.*

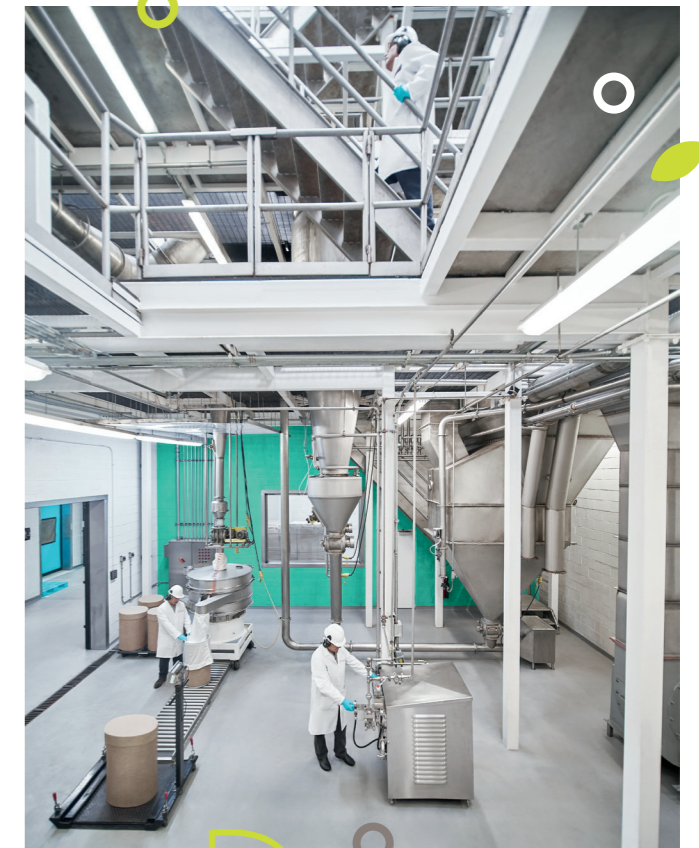
- certified organic
- NSF
- NSF Sport
- cGMP certification
- kosher and halal certifications are available
- GFSI available

*Not all products meet all certifications. Please talk to your Ashland sales representative for more information.

exceptional service

We are passionate, tenacious, solvers. We thrive on developing practical, innovative, and elegant solutions to complex problems, always pushing the boundaries of what's possible, and advancing the competitiveness of our customers across diverse industries.

Ashland is an all-in-one resource providing everything from comprehensive research and development to specialty ingredients, manufacturing, processing and production services. These integrated capabilities enable us to work together to fulfill customer needs from bench top to scale-up. Our collaborative approach helps us meet your needs whether it's by developing a custom formulation, enhancing a product's performance or creating the desired flavor profile.



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 **Ashland™**
always solving