

Bio-Fermentation Oil-Based Microencapsulation

Customized Solutions





About HSF

HSF has integrated and optimized technology of Oil Esterification and Molecular Distillation, High Efficiency Separation, Functional Factor Microencapsulation, Directed Microbial Fermentation, and High Efficiency Separation.

Our core business scope covers the research and development, production and sales of a multiple series of products including plant sterols/esters, natural vitamin E, functional oil microencapsulation, functional powder microencapsulation, and microbial fermentation, providing systematic product solutions for customers in the global nutrition and health field.



HSF's Core Technology Trinity

Bio-fermentation

Oil-based Microencapsulation

Customized Solutions



HSF Strategy

We will strive as always as a "Challenger" to win against the global competition by our longstanding innovation on R&D and business model. aiming at being a multinational corporation contributing to human health.



HSF's Core Values

Always In the Right Direction:

Customer-motivated
Market-oriented

Hard Working as Entrepreneurship:

Strivers First
Simplicity of Working Style

Create Enterprise's Core Competence:

Winning by Teamwork
Strong R&D Capabilities

Seeking Truth from Facts

Self-Criticism
Actual Data Tells



To HSF--

Thanks to HEALTHFUL,
that we have an opportunity to grow up with our respected customers;
Thanks to entrepreneurship,
that the days are approaching when we can get the shelter form HSF towering tree;
Thanks to sunny beach,
that we are able to embrace the healthy word gracefully and inclusively;
Thanks to self-confidence,
that we are born equal to make our own dream to be near and more realistic.

HSF Development Milestones

2011 HSF Founded

2012 HSF Laboratory Established

2014 HSF Natural Vitamin E Project

2015 HSF Phytosterol Ester Project

2016 HSF Functional Lipid Microcapsule Project

2018 Major Technological Breakthrough in Microbial Strain R&D

2019 Annual Sales Surpass 27.6 million USD

National-Level Key Engineering Research Center Project Approved

2020 HSF Awarded Shaanxi Province Science and Technology Prize (Second Class)

Recognized as a "Specialized, Refined, Distinctive, and Innovative" SME in Shaanxi Province

New Facility Officially Operational

Granulation Coating and Microencapsulated Powder Project Launched

Construction of HSF (Yangling) Health Industrial Park New Facility

2021 Company Sales Exceed 41.4 million USD

Two National Key R&D Programs Undertaken

Recognized as a Agricultural Technology Giant in Shaanxi Province

2022 HSF Laboratory Designated as "Shaanxi Provincial Special Edible Oil Engineering Technology Research Center"

Company Sales Surpass 55.2 million USD

Phase I of HSF Fermtek® Fermentation Project Completed and Operational

2023 Approved as Shaanxi Provincial Synthetic Biology Innovation Center

Approved as Shaanxi Provincial Functional Lipid Biosynthesis Engineering Research Center

Phase II of Fermtek® Fermentation Project Completed and Operational

2025 New Investment in Two Functional Lipid Microencapsulated Powder Production Lines

Awarded Shaanxi Province Science and Technology Progress Prize (First Class)

2024 Approved as Shaanxi Provincial High-Value Patent Cultivation Center for Bio-Manufacturing Industry



Qualifications & Honors



Patents

HSF holds 71 invention patents, covering areas such as Natural Vitamin E, Phytosterols, Phytosterol Esters, Algal DHA, β -Carotene, Functional Lipid Microencapsulated Powder, Natural Pigments, etc.

National Standards

HSF has participated in drafting and formulating national and industry standards for three products: Phytosterols, Phytosterol Esters, and Natural Vitamin E Raw Material DD Oil. Additionally, HSF is currently involved in the application process for two further national and industry standards.

Honors

- 2016**
 - Awarded Star Enterprise of 2015 by local government
- 2017**
 - Awarded Leading Enterprise in Industrial Construction by local government
- 2017**
 - Recognized as Engineering Technology Center by local government
- 2017**
 - Xi'an Healthful Biotechnology Co.,Ltd has been certified as a High-Tech Enterprise.
- 2018**
 - Recognized as a Gazelle Enterprise in the Yangling Demonstration Zone.
- 2018**
 - Recognized as Innovation R&D Center
- 2018**
 - Identified as Demonstration Enterprise of Innovation at provincial level
- 2018**
 - Shaanxi Healthful Bioengineering Co., Ltd. has been certified as a High-Tech Enterprise.
- 2019**
 - Awarded Top 100 of Xi'an Future Star
- 2019**
 - Approved with the Research Center on National Key Programs
- 2020**
 - Second prize of Shaanxi science and Technology Award "Specialization,refinement, characteristics and novelty" small and medium-sized enterprises in Shaanxi Province
- 2021**
 - Two national key R & D plans
- 2021**
 - Shaanxi Gazelle Company (fast-growing entity of agricultural sci-tech)
- 2022**
 - HSF's lab was awarded as "Research Center of Specilty Edible Oil of Shaanxi Province"
- 2023**
 - The Shaanxi Province Functional Lipid Biomanufacturing Engineering Research Center was approved
- 2023**
 - Approved as Synthetic Biology Innovation Center by Shaanxi Province
- 2024**
 - Approved as a high-value patent cultivation center for the biomanufacturing industry in Shaanxi Province
- 2025**
 - "Building an efficient cell factory to realize the production of vanillin by replacing chemical synthesis with biomanufacturing" was selected as one of the first batch of "Typical Application Cases of Artificial Intelligence in the Field of Biomanufacturing" by the Ministry of Industry and Information Technology.
- 2025**
 - HSF won the first prize of Shaanxi Provincial Science and Technology Progress Award.

Certifications & Qualifications



Management Philosophy

From its inception, HSF aspired to become a modern enterprise group adhering to international corporate governance standards. HSF understands that in the face of intense competition in the modern market, relying solely on an "individual owner" or "sole proprietorship" business model would not suffice to achieve enduring success in the global marketplace. Through a team-based business philosophy and management model, HSF has explored and developed an operational approach suited to its own characteristics, enabling rapid, stable, and healthy growth.

Leadership



Li Yusong

Shareholder, Founder, Chairman of the Board, Senior Engineer



Aaron Wang

Shareholder, Founder, CEO



Meng Yonghong

Shareholder, Founder, Chief Scientist, Professor



Max Meng

Shareholder, Founder, General Manager



Guo Jianqi

Shareholder, Founder, Production Director

Tech Oriented



Professor
Ph.D., China Agricultural University
Postdoctoral Fellow, Beijing University of
Chemical Technology
Visiting Scholar, Washington State University

Chief Scientist of HSF

- Led 2 General Program projects under the National Natural Science Foundation
- Led 1 project under the Ministry of Science and Technology's 863 Program
- Led 2 sub-projects under the National Key R&D Program
- Directed multiple research projects funded by the Ministry of Education's Doctoral Program
- Fund and the Shaanxi Provincial Department of Science and Technology
- Published over 90 papers, including more than 30 SCI-indexed papers
- Granted 31 patents
- Awarded 1 First Prize, 1 Second Prize, and 1 Third Prize in Shaanxi Provincial Science and Technology Awards
- Co-authored 2 academic monographs
- Recognized as a Shaanxi Provincial Technological Innovation and Entrepreneurship Talent
- Served as a Council Member of the Shaanxi Society of Agricultural Engineering

Honors

- Editorial Board Member of *China Oils and Fats*
- Young Editorial Board Member of *China Fruits and Vegetables*
- Professor and Dean of the College of Food Engineering and Nutritional Science, Shaanxi Normal University
- Deputy Director of the Ministry of Education's Engineering Research Center for High-Value Utilization of Western Fruit Resources

Positions

- Secretary-General of the Shaanxi Society of Food Science and Technology
- Founder and Technical Director of HSF



HSF R&D Center

The HSF Molecular R&D Center brings together cutting-edge synthetic biology technologies and interdisciplinary R&D expertise, dedicated to analyzing and reconstructing biological systems at the molecular level, and advancing biomanufacturing from the laboratory to industrial-scale production. The HSF Molecular Laboratory houses core technology platforms, including autonomous microbial strain library construction, high-throughput screening, protein engineering, and fully automated fermentation.

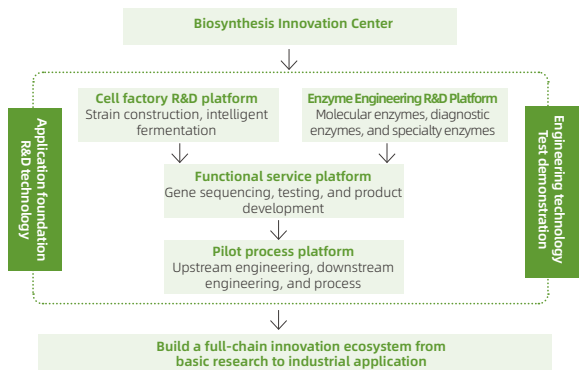
In 2025, HSF spearheaded the establishment of the Biosynthesis Innovation Center of Shaanxi Province, collaborating with multiple universities and leading enterprises to build an integrated "industry-university-research-application" collaborative innovation system. With a mission to advance green biomanufacturing, the center continuously optimizes microbial strain performance and fermentation processes to achieve efficient and sustainable biosynthesis of natural products. It provides critical technical support and solutions for sectors such as functional foods, biomedicine, and green chemistry, empowering industrial upgrading and sustainable development.

Biosynthesis Innovation Center of Shaanxi Province

The Biosynthesis Innovation Center of Shaanxi Province is a major innovation platform spearheaded by HSF Biotech, in collaboration with several universities and leading industry enterprises, including Shaanxi Normal University, Beijing University of Chemical Technology, and Northwest A&F University. Approved for establishment by the Shaanxi Provincial Department of Industry and Information Technology in June 2024, the center leverages advanced technical support from the National Key Laboratory of Green Bio-Manufacturing. It operates under a market-oriented professional management model, aiming to become a core hub for collaborative innovation and industrial application of synthetic biology technologies in Northwest China.



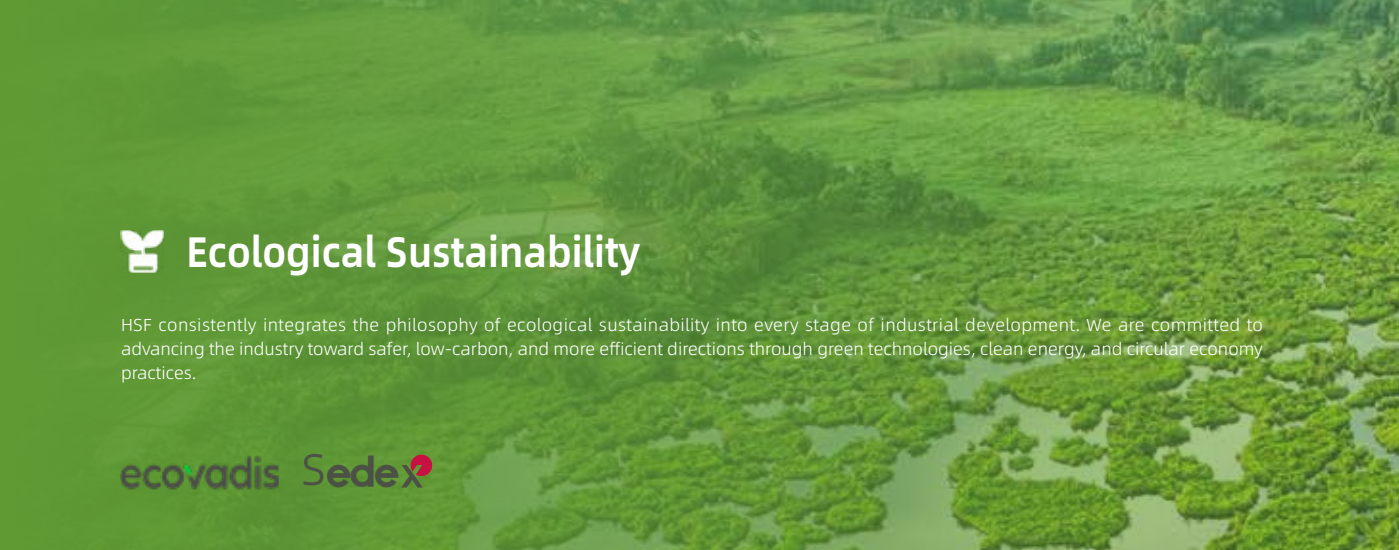
As the lead organization, HSF Biotech fully leverages its industry-leading and resource integration capabilities to drive the center's construction of a full-chain innovation system covering five core platforms: "cell factory R&D, enzyme engineering R&D, pilot process, functional services, and operation management." Taking the creation of core fermentation strains and key enzymes as a breakthrough, it aims to achieve a paradigm shift in natural product biomanufacturing and continuously explore new green and efficient biosynthesis pathways.



Main Tasks of the Center

The center focuses on the following key areas:

- 1 Strengthening original technology supply by advancing core strains, key enzymes, foundational enabling technologies, and intelligent manufacturing to enhance independent innovation capabilities.
- 2 Building a competitive product system by leveraging the strengths of natural product bio-manufacturing and promoting the large-scale development of biomedical and biochemical products.
- 3 Establishing a regional industrial hub by creating a synthetic bio-manufacturing base in Northwest China and developing a replicable and scalable "Shaanxi Model."
- 4 Improving the support and guarantee system by advancing standard formulation, intellectual property transformation, and financial service innovation to enhance the overall competitiveness of the industrial chain.



Ecological Sustainability

HSF consistently integrates the philosophy of ecological sustainability into every stage of industrial development. We are committed to advancing the industry toward safer, low-carbon, and more efficient directions through green technologies, clean energy, and circular economy practices.

ecovadis Sedex

Green Production

Green Technology

In oil refining, esterification, separation, and extraction processes, HSF opts for environmentally friendly bio-enzymatic extraction technologies, simplifying traditional production flows. Compared to conventional solvent extraction, this approach avoids the use of strong acids and alkalis that impact product quality. It is solvent-free, low-pollution, low-energy-consumption, generates minimal exhaust gases and residues, and fully aligns with HSF's sustainable production philosophy.

Biosynthesis

Compared to traditional chemical synthesis, bio-synthesis technology replaces non-renewable fossil resources with renewable biological resources and replace high-energy and highly-polluting petrochemical and coal-based processes with green and clean biological manufacturing processes. The production process is safer, greener, and more environmentally friendly, and significantly reduces production costs, making it an important breakthrough for green industrial manufacturing and innovative development.

To enhance the benefits of sustainable development, HSF Biotech actively promotes fermentation production based on biological raw materials, and is committed to the research and industrial application of fermentation key technologies. With an investment of USD 17.6 million and large-scale green fermentation production lines have been built in the first and second industrial parks of HSF Biotech. During the fermentation process, no sulfides are generated, which can significantly reduce pollutant emissions. Biological-based raw materials can be degraded and converted into CO₂ and H₂O, returning to nature, with strong renewable, safety, and environmental friendliness.

HSF Biotech places great emphasis on fundamental research in synthetic biology and strain construction. Using world-leading technologies such as bioinformatics and synthetic biology, they have stockpiled and developed a portfolio of strains with industrial capabilities and competitive advantages. They have established a solid and reliable technological foundation for the eco-sustainable production of functional materials.

Green Energy

HSF Biotech adheres to the green development concept of "resource intensiveness and low-carbon energy". We actively participate in the "green electricity peak-shaving" project of the power grid and promote the implementation of distributed photovoltaic power generation and energy storage projects on the factory roof. The project capacity is 0.8Mwp, the annual power generation is 900,000KW, and the green electricity substitution rate reaches more than 25%, realizing clean energy substitution and green transformation and upgrading.

R&D and Upgrading

Increasing investment in research and development (R&D) and accelerating product upgrades are the firm commitments of HSF Biotech in the path of sustainable development. In order to ensure that the technology and products always maintain the leading position in the industry, HSF continues to increase R&D funds every year to invest in product development and technology optimization. It has established four major laboratories, namely the HSF Biotech Molecular Laboratory, High-Efficiency Separation Engineering Laboratory, Modification Engineering Laboratory, and Fermentation Laboratory. Led by Dr. Meng Yonghong, the Chief Scientist, the team continuously conducts research on common key technologies related to the green manufacturing of functional components in oils/fruits and the circular economy in the fermentation industry. This accelerates the industrial transformation and upgrading of HSF Biotech while consistently adopting new technologies, processes, and equipment to enhance green intelligent manufacturing capabilities.



Energy Conservation Emissions Reduction

Achieving carbon peak and carbon neutrality is a significant strategic decision made by the government. It is an inevitable choice to address the prominent issues of resource and environmental constraints and achieve the sustainable development of the Chinese nation. Under the "dual-carbon" goals, HSF Biotech prioritizes energy conservation and emission reduction as a crucial component of its sustainable development strategy and emphasizes fulfilling its responsibilities in environmental protection. The company practices environmentally friendly and energy-saving development, deepens its product processing system, improves its waste treatment system, enhances resource utilization and circular economy construction, and maximizes the reduction of environmental impact during production and operation.



Sewage Treatment Capacity

Sewage Treatment is the greatest requirement for sustainable development in the company's production and operation, and it is also a sincere manifestation of the company's commitment to sustainable development. Since its establishment, HSF Biotech has considered green environmental protection as a fundamental requirement in the design of its production lines. The company has invested USD 414,000 in the construction of its sewage treatment facilities, which utilize a fully automated control system. The control process of the sewage treatment system is simple, with low work intensity.

The layout of the sewage treatment system of HSF Biotech is rational, and coordinated which meet the construction regulations and high environmental standards in China Supervisory Department. Since the implementation of the sewage treatment system, all wastewater treatment has met the discharge standards, and earning the title of a high-quality demonstration project. HSF Biotech adopts green production processes, resulting in minimal emissions during the production process, greatly reducing its impact on the environment.



Circular Economy

The company is vigorously enhancing resource utilization and circular economy development. In the production process, waste materials are primarily recycled. As one of the world's leading suppliers of plant sterols/esters and natural vitamin E, the company's products are mainly made from DD oil which is a byproduct of oil refining. Through independent research and development, the company has continuously improved the full-scale processing of DD oil-plant sterols-sterol esters-stereos/esters microcapsules and DD oil-mixed tocopherol-D-alpha tocopherol-D-alpha tocopheryl acetate-D-alpha tocopheryl succinate-natural vitamin E series microcapsules, effectively turning waste into treasure. This has established a complete and sustainable development pattern for the plant sterols/esters and natural vitamin E industry. At the same time, after strictly selective which the company has established friendly cooperation with multiple organic waste recycling companies.



Veto Power

The company implements an environmental protection veto power investment project, requiring all investment projects to meet environmental requirements. The feasibility study of the projects always fully considers environmental design, environmental investment, and the implementation of the projects pass environmental acceptance.



HSF

Product Series

- 🍄 Fermtek® Fermentation Series
- 🧪 SoliPro® Granulation/ Coating Powder Series
- 🌱 VegeLipi® Function Lipid Microencapsulated Power series
- 🥛 Gocreamer® Non-Dairy Creamer
- 🌿 VegeToc® Natural Vitamin E Series
- 🌾 MaxSterol® Phytosterols / Phytosterol Esters Series

Fermtek® Fermentation Series

Since 2012, after a decade of continuous optimization of microbial strains and extraction processes, HSF has invested 4,416,000 USD and 12,420,000 USD in its first and second industrial parks, as to construct medium and large-scale fermentation and extraction production lines. Leveraging these two independent and differentiated fermentation and extraction lines, HSF provides customers with end-to-end and customized services spanning from small-scale trials and pilot-scale production to full-scale manufacturing. The Fermtek® Fermentation Series includes products such as Algal DHA, Natural Carotenoid, Coenzyme Q10, Fermented Fruits and Vegetables, and Botanical Extracts. Importantly, HSF offers personalized "tailor-made" fermentation products and technical services.

HSF Core Technology for Fermentation Products: Directional Microbial Fermentation, High Efficiency Separation

NutraColour® β-Carotene

Powered by the dual engines of fermentation technology and intelligent equipment, and supported by the "Science-Technology-Industrialization" R&D innovation system, HSF overcame the industrialization bottleneck of β-carotene through eight years of dedicated research. The result is NutraColour® β-Carotene. Utilizing a thousand-ton intelligent production line ensures consistent output, guaranteeing raw material stability and timeliness. Additionally, multiple specifications and models have been developed to meet the market and application needs of clients across various fields.

Products	Specification	Product Description
β-Carotene powder	96%, Crystal	High purity, fermentation-derived
Micro-encapsulated β-Carotene Powder	1%-20%, Powder	Rapid dispersion in water with high stability
β-Carotene Granules	5%-20%, Granules	Strong pressure resistance and robust stability
β-Carotene Oil Suspension	20%, 30%, Oil Suspension	Uniform and stable color, nano-scale emulsion
β-Carotene Emulsion	1%-10%, Emulsion	Quick diffusion in water with consistent and stable color



2

Two Modern Fermentation and Extraction Plants



10+

A Decade of Fermentation Experience



70+

Patented Inventions



120+

Proprietary Registered Microbial Strains



40+

R&D Technology Team



4

Engineering Laboratory

Certified by QS, FSSC 22000, ISO 9001, NSF-cGMP, IP (NON-GMO), Kosher, MUI HALAL/ARA HALAL

NutraColour®	Specification	Appearance	Packaging	Application
Lycopene Powder	96%	Crystal		Tablets
Lycopene Oil Suspension	6%, 10%, 20%	Oil Suspension	1kg/5kg/20kg/box or customized	Softgels
Micro-encapsulated Lycopene Powder	1%, 5%, 10%	Powder(CWD) & Beadlets		Powder

FermAlge® Product	Specification	Package	Application
DHA Oil (Docose Hexaenoic Acid Oil)	40%-70%	5kg/20kg per drum	Dietary supplements, food&beverages, animal feed etc.
DHA Oil Powder (Docose Hexaenoic Acid Oil Powder)	10%/20%/30%	5kg/20kg per drum	Infant formulas, Dietary supplements, food&beverages, animal feed etc.
Algal DHA Schizochytrium Powder	20%	20kg per carton	Aquaculture, Animal Feed etc.

CoenPrime® Product	Specification	Characters	Packaging	Application
	98%	Crystalline Powder	5kg/25kg per drum or customized	Softgels, Tablets, Hard Capsules
Coenzyme Q10	10% / 20% / 40%	Powder (CWD)	5kg/25kg per drum or customized	Powder, Hard Capsules
	10%	Granular		Hard Capsules, Tablets

FermHerb® Series				
Fermented Astragalus Powder	Fermented Maca Extract	Fermented Papaya Extract	Fermented Fruit and Vegetable Extracts	
Fermented Green Tea Extract	Fermented Ginkgo Biloba Extract	Fermented Turmeric Extract	Fermented Red Ginseng Extract	

We offer customized and targeted fermentation services for a wide range of fruits, vegetables, traditional Chinese herbs, plant extracts (single components or mixtures).

FermHerb® technology utilizes the advanced fermentation and extraction equipment, along with registered and safe microbial strains such as lactic acid bacteria and yeast. This process subjects the functional components to a pre-digestive treatment, significantly enhancing product bioavailability while reducing potential toxicity and side effects.

Certified by QS, FSSC 22000, ISO 9001, NSF-cGMP, IP (Non-GMO), Kosher, MUI HALAL/ARA HALAL

SoliPro® Coating & Granulating Powders

HSF Biotech's micro-encapsulation solid powder project is an extension, also a supplement, to its existing micro-encapsulated lipid powder line. The project starts in 2019 and puts into massive production in May 2020. With proprietary technologies and state-of-the-art equipment, the project is to encapsulate solid materials into micro particles, addressing the challenges that have been facing the market, such as poor solubility in water, instability of active ingredients, difficult handling and flowing ability, bad tastes and odors, hard to control the release of core materials and etc.

HSF was the first in China to pass cGMP certification of Micro-encapsulated Solid Powder in 2021

Amino Acid Microencapsulated Powders

Product Name	Specification	Type	Application
Branched-Chain Amino Acid (BCAA)	2:1:1, 4:1:1, Customized	Instant Soluble/ Granulated/ Moisture-Proof & Taste-Masked/ Sustained-Release	Solid Beverages, Liquid Beverages, Capsules, Tablets
Single Amino Acids (Leucine, Isoleucine, Valine)	70% - 95%	Instant Soluble / Granulated / Moisture-Proof & Taste-Masked/ Sustained-Release	
Essential Amino Acids (EAA)	Customized	Instant Soluble / Granulated / Moisture-Proof & Taste-Masked/ Sustained-Release	

Functional Micro-encapsulated Powders

Product Name	Product Type	Specification	Application
L-Carnitine	Moisture-Resistant	85%, 90%	Capsules, Tablets, Solid Beverages
Sorbic Acid	Sustained-Release	85%	Capsules, Tablets, Solid Beverages
DL-Malic Acid	Moisture-Resistant / Sustained-Release	85%	Capsules, Tablets, Solid Beverages
L-Methionine	Moisture-Resistant / Taste-Masked	85%	Capsules, Tablets, Solid Beverages
Creatine Monohydrate	Instant Soluble	Customized	Capsules, Tablets, Solid Beverages
β-Alanine	Moisture-Resistant / Sustained-Release	85%	Capsules, Tablets, Solid Beverages
Phosphatidylserine (PS)	Instant Soluble / Granulated	10%, 20%, 50%, 70%	Capsules, Tablets, Solid Beverages

Category	Product Name	Specification	Product Type	Application
Vitamins	Vitamin B, Vitamin C, GPC, etc.	Customized	Taste-Masked Granules / Moisture-Resistant Granules	Capsules, Tablets, Solid Beverages, Liquid Beverages
Minerals	Ferrous Sulfate, Ferrous Lactate, Ferrous Fumarate, etc.		Taste-Masked Granules / Moisture-Resistant Granules	
Others	HMB-Ca, etc.		Moisture-Resistant Granules / Taste-Masked Granules / Sustained-Release	

Certified by QS, FSSC22000, ISO9001, NSF-cGMP, Novel Food, IP (Non-GMO), Kosher, MUI HALAL/ARA HALAL

VegeLipi® Micro-encapsulated Functional Lipid Powder

HSF Biotech's VegeLipi® micro-encapsulated lipid powder is based on its patented micro-encapsulation technology, aiming at the challenges that have been facing the market of functional lipids, such as instability of active ingredients, difficult handling and flowing ability, poor solubility in water and etc.

HSF Core Technology for Micro-encapsulated Lipid Powder: Emulsification Technology, Embedding and Reinforcement Technology, Beadlets & CWS (Cold Water Soluble) Microencapsulation Technology, Wurster Fluidized Bed Spray Granulation, and Multi-Level Coacervation Technology.

HSF was the first in China to pass cGMP certification of Micro-encapsulated Functional Lipid Powder in 2021.



In 2025, HSF Biotech made a significant investment to commission two new Phase II production lines for functional lipid microcapsules. This expansion establishes a modern production base operating at world-class standards, dedicated to serving the needs of diverse industries including special medical and dietary foods, infant formula, dairy products, functional beverages, coffee, and bakery. HSF Biotech now operates a total of five modern production lines for functional lipid microcapsule powders. This setup provides flexible, customized production and delivery capabilities, accommodating orders from small batches of 50 grams per day to large-scale outputs of 30 tons per day. With a combined annual capacity of 12,000 tons, these lines produce a comprehensive range of microencapsulated powder products. Our portfolio includes fat-soluble vitamins, Omega-3/6/9 series, MCT oils, DHA/EPA, OPO, encapsulated pigments, and various other functional lipids. Furthermore, we offer end-to-end support, guiding customers seamlessly from initial laboratory trials and pilot testing through to full-scale commercial production.

VegeLipi® MCT Oil Powder

Product	Specifications	Formulas	Features	Applications
Vegan	MCT-A70	Coconut, MCT Oil (70%, C8:C10-6:4) Carrier: acacia fiber	Vegan, Allergen free, Clean Label, Sugar Free, Prebiotics	Keto-supplement, weight management
	MCT-A70-OS	Organic MCT Oil (70%, C8:C10 6:4); Carrier: acacia fiber	Organic, Vegan, Allergen free, Clean Label, Sugar Free, Prebiotics	Keto-supplement, weight management
Dairy	MCT-SM50	MCT OIL: (50%, C8:C10-6:4); Carrier: Maltodextrin, Starch sodium octenylsuccinate	Vegan, Allergen free, CWS	Solid beverage, blended powders
	MCT-CI70	MCT Oil: (70%, C8:C10 6:4); Carrier: Isomalttooligosaccharide, Sodium Caseinate	Dairy formula, Low carbohydrate, CWS	Solid beverage, shakers, blended powders, Keto-supplement, weight management
	MCT-CM50	MCT OIL: (50%, C8:C10 6:4); Carrier: Maltodextrin, Sodium Caseinate	Dairy formula, CWS	Solid beverage, shakers, blended powders, Keto-supplement, weight management
Customized	MCT OIL 70%-95%, Source: Coconut Oil or Palm Oil, C8:C10 7:3			

Certified by QS, FSSC 22000, ISO9001, NSF-cGMP, NOP/ECOCERT, IP (Non-GMO), Kosher, MUI HALAL/ARA HALAL, etc.

VegeLipi® Other Functional Microcapsule Powder

Functional Lipid Powder	Specification	Package	Appearance
Diacylglycerol Oil Powder	20%	20kg per drum or customized	White to light yellow powder
Grass-fed Butter Powder	70%		White to light yellow powder
Coconut Oil (Refined/Virgin) Powder	70%		White to light yellow powder
CLA Powder	60%		White to light yellow powder
Milk Thistle Seed Oil Powder	50%		White to light yellow powder
Avocado Oil Powder	50%		White to light yellow powder
Hemp Seed Oil Powder	50%		White to light yellow powder
Acer Truncatum Seed Oil Powder	50%		White to light yellow powder

Plant-based Omega-3/6/9	Specification	Package	Appearance
Flaxseed Oil Powder	50%	20kg per drum or customized	White to light yellow powder
Powdered Flaxseed Oil Powder	50%		White to light yellow powder
Sunflower Seed Oil Powder	50%		White to light yellow powder
Evening Primrose Oil Powder	50%		White to light yellow powder
Borage Oil Powder	50%		White to light yellow powder
Safflower Seed Oil Powder	50%		White to light yellow powder
Olive Oil Powder	50%		White to light yellow powder
Vegetable Fat Powder 157	50%		White to light yellow powder
Vegetable Fat Powder 110	50%		White to light yellow powder
Specific Complete Nutrition Fat Powder	50%		White to light yellow powder
High Oleic Sunflower Seed Oil Powder	50%-70%		White to light yellow powder

Liposoluble Vitamins	Specification	Appearance
Vitamin D3 Powder	100,000 IU	White to light yellow powder
Vitamin A, Vitamin D, Liposoluble Vitamin K	Customized	White to light yellow powder

Gocreamer® Non-Dairy Creamer

HSF ensures stable product flavor and excellent solubility through its mature oil microencapsulation technology, precise ingredient formulation, efficient spray drying, and flavor maturation. Meanwhile, we prioritize food safety as our lifeline, implementing full-chain traceability and rigorous inspections from raw materials to finished products under the FSSC 22000 and ISO 9001 management systems, thereby building trustworthy zero-trans health quality.

Product	Specifications	Formulas	Application Value
Creamer for Milk Tea	CT-C235	protein(%) ≥ 1.7-2.3; Fat content(Typical value) ≥ 35.5%	Create classic and innovative milk teas with a three-dimensional taste and rich milk aroma
	CT-Cp232	protein(%) ≥ 1.7-2.3; Fat content(Typical value) ≥ 32%	
Creamer for Coffee	CC-C333	protein(%) ≥ 3.0-3.6; Fat content(Typical value) ≥ 33.3%	Professional coffee matching, easily presenting high-quality milk-based coffee
	CC-C330	protein(%) ≥ 2.5-3.0; Fat content(Typical value) ≥ 30%	
CWS Creamer	CI-C432	protein(%) ≥ 2.5-3.0; Fat content(Typical value) ≥ 18%	Ensure consistent quality of iced drinks and expand the possibilities of cold drink menu
Standard Creamer	CN-C228	protein(%) ≥ 1.0-2.0; Fat content(Typical value) ≥ 28%	Economical and efficient, suitable for beverage, dessert and food industries
	CN-C230	protein(%) ≥ 1.5-2.5; Fat content(Typical value) ≥ 30%	
High-Fat Creamer	CN-C270	protein(%) ≥ 2.0-2.5; Fat content(Typical value) ≥ 70%	Provide a perfect solution for people who exercise to lose weight
	MCT-CI70	protein(%) ≥ 4.0-5.0; Fat content(Typical value) ≥ 70%	
Functional Creamer	MS-CI50	protein(%) ≥ 2.5-3.0; Fat content(Typical value) ≥ 50%	Rich in polyunsaturated fatty acids, regulating the fatty acid ratio

Tailored Solutions, Collaborative Value Creation



Flavor Customization:

Adjust the flavor profile such as dairy notes, sweetness, and richness – based on your specific needs.



Application Customization:

Optimize product performance for your unique processes, including cold brewing, baking, or specialty beverage formulation.



Specification Customization:

Flexibly adjust key parameters including fat content, sugar levels, and protein composition.

VegeToc® Natural Vitamin E

HSF is a leading domestic manufacturer of high-end natural vitamin E raw materials. Our product portfolio includes mixed tocopherols, d-alpha tocopherol, tocopheryl acetate, and tocopheryl succinate, with purity and stability surpassing that of comparable domestic products. HSF operates a national-level engineering research center, supported by advanced instrumentation and a highly skilled technical team.

Drawing on the strengths of both domestic and international industry practices, the company has equipped itself with independently designed production lines that balance quality and efficiency. This ensures high product quality while effectively reducing production costs, giving HSF's natural vitamin E raw materials a stronger competitive edge in today's market.

In 2019, HSF invested an additional 50 million RMB to expand its natural vitamin E production line in its second industrial park, significantly enhancing its global competitive advantage in high-end natural vitamin E. Currently, HSF's annual production capacity for its high-end natural vitamin E series reaches 600 tons

HSF is the first in the industry to obtain both cGMP and COSMOS certifications for its natural Vitamin E

Product	Specification	Appearance	Packaging	Purpose & Advantages
Mixed Tocopherols Concentrate	50%, 70%, 90%, 95%	Brownish-red oil	20kg/190kg/drum or customized	Antioxidant, dietary supplement, animal feed, etc.
Mixed Tocopherols Powder	30%, 50%	Light yellow powder	20kg/carton or customized	Solid beverages, antioxidant, dietary supplement, animal feed, etc.
Mixed Tocopherols Concentrate (Sunflower Source)	70%	Brownish-red oil	20kg/190kg/drum or customized	Antioxidant, dietary supplement, animal feed, etc.
Tocotrienols	50%, 70%, 80%	Brownish-red oil	20kg/190kg/drum or customized	Antioxidant, dietary supplement, animal feed, etc.
D-delta Tocopherol	70%	Brownish-red oil	20kg/190kg/drum or customized	Antioxidant, dietary supplement, animal feed, etc.
D-alpha-Tocopherol	1000IU-1430IU/g	Brownish-red oil	20kg/190kg/drum or customized	Dietary supplement, nutritional fortifier, cosmetic ingredient, etc.
D-alpha-Tocopherol Powder	500IU/g	Light yellow powder	20kg/carton or customized	Dietary supplement, nutritional fortifier, cosmetic ingredient, etc.
D-alpha-Tocopheryl Acetate	1000IU-1360IU/g	Light yellow oil	190kg/drum or customized	Dietary supplement, nutritional fortifier, cosmetic ingredient; softgels, etc.
D-alpha-Tocopheryl Acetate Powder (CWD)	700IU/g	White powder	20kg/carton or customized	Dietary supplement, nutritional fortifier; hard capsules, tablets, etc.
D-alpha-Tocopheryl Acetate Powder (Beadlets)	950IU/g	Granules	20kg/carton or customized	Dietary supplement, nutritional fortifier; hard capsules, tablets, etc.
D-alpha-Tocopheryl Succinate	1185IU/g, 1210IU/g	White crystalline powder	25kg/drum or customized	Pharmaceutical ingredient, dietary supplement, nutritional fortifier; hard capsules, tablets, etc.
Water-Soluble Natural Vitamin E (TPGS)	20%-25%	White to light yellow waxy solid	20kg/drum or customized	Dietary supplement, nutritional fortifier, solubilizer, absorption enhancer, etc.



MaxSterol® Phytosterols

As a drafting company of the plant sterols industry standards in China, HSF has achieved fruitful results over the years in the functionality, safety, and application fields of plant sterols, earning high recognition from numerous renowned enterprises both domestically and internationally. The Maxsterol® plant sterols produced by HSF are manufactured using HSF's patented technology, utilizing by-products of plant oils and fats as raw materials to produce a series of plant sterol products in various specifications and for multiple application areas.

HSF took a leading role in drafting the national and industry standards for phytosterols/esters.

Product	Source	Features	Specification	Package	Applications
Phytosterols	Soy	Fine Powder	95%	25kg/bag/carton, or customized as required	Functional foods, tablet, hard capsule
Phytosterols	Pine	Fine Powder	97%	25kg/bag/carton, or customized as required	Rich in β -Sitosterol ; Widely used Functional foods, tablet, hard capsule
Phytosterols	Soy	Granule	90%	25kg/bag/carton, or customized as required	Excellent flowing ability ; functional foods, tablet, hard capsule
Phytosterols	Pine	Granule	90%	25kg/bag/carton, or customized as required	Rich in β -Sitosterol & Excellent flowing ability ; functional foods, tablet, hard capsule
Stigmasterol	Soy	Fine Powder	90%, 95%	25kg/bag/carton, or customized as required	For plant growth regulator, prodrugs, raw material of high-end cosmetics
β -Sitosterol	Soy/Pine	Fine Powder	60%, 70%	25kg/bag/carton, or customized as required	Rich in β -Sitosterol ; For functional foods, prodrug, raw material of high-end cosmetics



LowChol® Phytosterol Ester

HSF is the earliest enterprise in China engaged in the research, development, and large-scale industrial production of phytosterol esters. It participated in the drafting and formulation of China's industry standards for phytosterol esters and is also the only Chinese company to have obtained the European Union's Novel Food certification approval. HSF holds multiple invention patents for phytosterol esters. Unlike similar products abroad, HSF uniquely employs a green, solvent-free and catalyst-free process, utilizing bioconversion technology and low-temperature concentration and separation technology. This approach greatly preserves the biological activity of the natural functional components in phytosterol esters while significantly enhancing product stability, color, and ease of use. Through years of technological innovation and development, to meet customer needs in various application scenarios such as edible oils, specialty fats, dairy products (dry and wet processing), functional foods, solid beverages, cosmetics, and daily chemical products, HSF has successfully developed over ten different phytosterol ester series products. This caters to the demands of clients and markets across different fields.

HSF took a leading role in drafting the national and industry standards for phytosterols/esters.

Product	Source	Features	Specification	Package	Applications
Phytosterol Ester	Soy	Paste	97%	20kg/drum, or customized	Functional foods, tablet, hard capsule
Phytosterol Ester	Pine	Paste	97%	20kg/drum, or customized	Rich in β -Sitosterol ; Functional foods, tablets, hard capsules
Micro-encapsulated Phytosterol Ester Powder	Soy/ Pine	CWS Powder	50% 67%	20kg/drum, or customized	Functional foods, solid beverage, dry-process dairy products, cosmetic
Healites PES/PEP	Soy/ Pine	Powder	97%	10kg/drum, or customized	Cosmetics and personal care products



Tech Oriented

Four core technologies of HSF



Oil Esterification and Molecular Distillation Technology

HSF is a company that is deeply rooted in health, also they always take "Green, Nutrition, Health" as the product development purpose. Then, according to the functional oil modification and green separation research. Also, shattering with solvents and catalysts in the traditional esterification system, in order to reduce the activity loss induced by long-term heating of nutrients. Then, utilizing refined physical detachment and multi-stage molecular distillation technology. Therefore, under the presumption of ensuring nutrition, to provide products that are safer to eat.



High efficiency separation technology

The study content of HSF about the high efficiency separation technology primarily concentrates on two parts: one is about the high efficiency detachment of lipids and nutrients. Second, the high efficiency separation of pollutants. Which means, about the highly efficient separation of nutrients, throw as few harmful substances as possible, and replace chemical processes with physical ones to the greatest extent possible. Then, about the separation of pollutants, the removal of harmful substances as efficiently as possible, however, not limited the active ingredients of the product, also, it will not deliver secondary pollution to the product.



Functional factor microencapsulation technology

Practicing the natural polymer materials with functional oil or oil-soluble core material, to format a small vesicle, which is a kind of oil-in-water (O/W) structure. According to the chemical and physical characteristics of various functional implications and the customized necessities of customers. HSF targets different studies and screens to build up suitable materials and linking agents. Those practices can realize the scientific embedding of functional substances, particularly enhancing the taste, shielding the odor, improving the oxidation stability, improving the mechanical resistance, accelerating the dissolution, accurate control of slow release, scientific targeted release, and efficient directional absorption.



Directed microbial fermentation technology

HSF has established a complete gene mining and modification platform, a microbial precise entire self-control fermentation platform, and an advanced green enzyme engineering development platform. Genomic analysis using molecular biology and genetic engineering techniques, change the metabolic pathway of industrial microorganisms and regulate the metabolic flow. Functional factors were prepared by modern biological fermentation technology, further discovering and extracting natural functional ingredients, and applying them to functional food processing, improving the added value of products and expanding the breadth and depth of product applications.

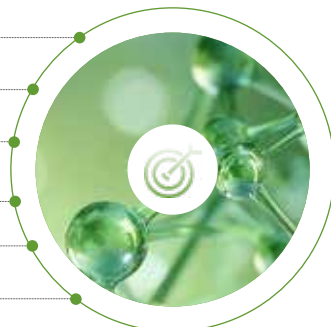


Functional Lipid Microencapsulation Flow Chart



Process Advantages

- Effectively preserves the activity of nutrients.
- Isolates the odor and bitterness of the core material, enabling controlled release.
- Nanoscale droplets are more conducive to human absorption.
- Facilitates transportation and usage.
- Improves the product's reconstitution properties.
- Achieves water solubility for oil-based products, expanding the range of applications.



Directed microbial fermentation technology Flow chart

Strain Breeding



Selected high-quality strains with strong genetic stability

Intelligent Fermentation



Automated fermentation platform providing optimal growth conditions for more stable production batches

High-efficiency Extraction



High-efficiency separation and extraction, meeting EU standards with high purity

Technology Empowerment



Lipid microencapsulation technology tailored to requirements, expanding application fields

Based on the above core technologies, HSF can provide you with DeePPD® customized collaborative development services.



Five Directions on Product Partnership Development

- 1 Lipids Esterification, purification, separation and blending
- 2 Lipid Micro-encapsulation and mixing
- 3 Powder Products Micro-encapsulation and mixing
- 4 Nutrient Blending and Premixing
- 5 Microbial Fermentation and Extracting



HSF Manufacturing Sites



HSF R&D Center





HSF Headquarter

Company Name: Xi'an Healthful Biotechnology Co.,Ltd.

Address: Floor 6 and 8, Huihang Plaza, Hang Tuo road, Chang'an District, Xi'an, China.

HSF R&D Center

Address: 3rd Floor, Building A, Huigu Innovation Park, Hangchuang Road, Chang'an District, Xi'an City, Shaanxi Province, China.

Tel: 029-89693973

Manufacturing sites

Company Name: Shaanxi Healthful Bioengineering Co.,Ltd.

Add I : C1-C5 Building, Torch Industrial Park, YangLing District, Shaanxi, China.

Add II: HSF Industrial Park, Chuang Xin Road, Yangling Demonstration Zone, Shaanxi Province, China

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