

INNOVATION
SERVES A BETTER LIFE



To HSF

Thanks to HEALTHFUL,
for providing us a platform to share health philosophy
and experience with our respected customers;
Thanks to the enterprising spirit we have been holding,
that we can expect the days when
HSF is leading us to create a more healthy and better life.
We are always dreaming of the sunshine and the beach,
that we can free ourselves and embrace a
healthy world gracefully and inclusively.
We are believing that each individual is born equal,
to create their own colorful yet realistic dream.

HSF BACKGROUND

2011

HSF Established

2012

Laboratory Set Up

2014

First Plant Completed
(Natural Vitamin E)

2016

Vegetable Oil Powder Line

2015

Plant Sterol Ester Line

2018

Breakthrough

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.

2019

Second Plant
(Two of Four Production Lines Completed)

2021

Engaged in two national key R&D plans

gh in fermentation project

2020

Coating & Granulating Line

2022

Fermentation Line(Launch of Fermtek™)

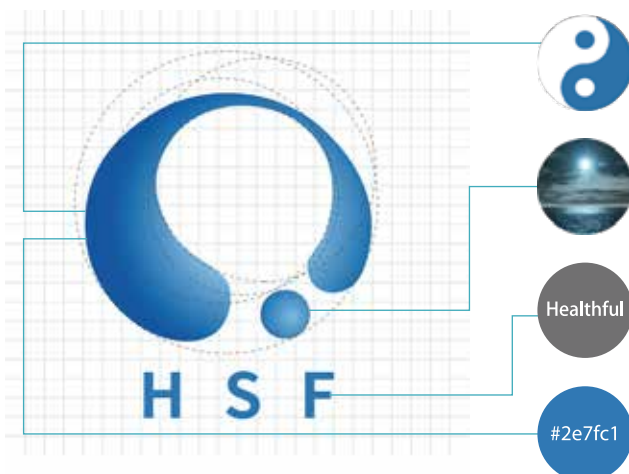
// About HSF BIOTECH

HSF Biotech is an innovation-driven biotechnology company. Since its establishment, the company has been committed to the R&D of refining, molecular distillation, functional ingredients microencapsulation, bioengineering bacteria fermentation, and high-efficiency separation and purification technology.

We are providing systematic product solutions to global customers in nutrition and health field. Innovation serves a better life is HSF's tireless pursuit. Our core production lines include plant sterols/esters, natural vitamin E, functional oil microencapsulation, functional powder microencapsulation, ferulic acid and fermentation products. Our products are widely accepted in the fields of healthcare&nutrition, food&beverage, animal nutrition and cosmetics&personal care and etc.



// Story of The LOGO



TAIJI AND BAGUA

The design of the logo is inspired by Taiji. Taiji is the Chinese cosmological term for the "Supreme Ultimate" state of undifferentiated absolute and infinite potential, the oneness before duality, from which Yin and Yang originate.

THE STAR AND THE SEA

The logo resembles a drop of water to be incorporated into the sea. As is remarked by Albert Einstein, A Single Drop of Water Helps to Swell the Ocean, we believe that with the joint efforts of each member of the company, HSF Biotech will be a shiny star in the world market.

HSF

The Chinese name of the company, Haisifu, is transliterated from the pronunciation of healthful and is to indicate that HSF is dedicated to the industry of grand healthcare. Haisifu is also taken from the concept of being tolerant to diversity and to be greater! Moreover, being tolerant to diversity and to be greater is the eternal and unchanging pursuit of HSF.

COLOR

The color of the logo is from the blue sea. HSF Biotech as a company is like the unceasing sea, and each member of the company is like a drop of water, being tolerated by the sea and devoting to the sea.

// Qualifications & Honors

Patents

HSF Biotech owns 59 patents, covering the production of natural vitamin E, phytosterol, phytosterol ester, stigmasterol, ferulic acid, micro-encapsulation fat powders and microbial fermentation.

National Standards

HSF Biotech participates in drafting the national standards for phytosterol, phytosterol ester and DD oil (the raw material of natural vitamin E).

Honors

- ▶ 2016-01: Awarded Star Enterprise of 2015 by local government
- ▶ 2017-02: Awarded Leading Enterprise in Industrial Construction by local government
- ▶ 2017-10: Recognized as Engineering Technology Center by local government
- ▶ 2017-10: Recognized as Hi-tech Enterprise
- ▶ 2018-01: Recognized as Hi-tech company
- ▶ 2018-09: Recognized as Innovation R&D Center
- ▶ 2018-11: Identified as Demonstration Enterprise of Innovation at provincial level
- ▶ 2019-10: Awarded Top 100 of Xi'an Future Star
Approved with the Research Center on National Key Programs
- ▶ 2020-05: Awarded second prize of Shaanxi science and Technology Award "specialization, refinement, characteristics and novelty" small and medium-sized enterprises in Shaanxi Province
- ▶ 2021-12: Engage in two national key R & D plans
- ▶ 2022-12: HSF laboratory was awarded "Special Edible Oil Engineering Technology Research Center in ShanxiProvince

Certifications



SC



cGMP



FSSC22000



ISO9001



KOSHER



ARA HALAL



MUI HALAL & BPJPH



FAMI-QS



NOP&EOS
ECOCERT Organic



IP(NON-GMO)



// Tech Oriented

○ R&D Leader



Mark Meng

○ Specialty

Functional ingredients manufacturing from oil/fruit, High Value-added applications of oil/fruit, Biological fermentation Engineering

○ Resume

Dr. Meng is Ph.D. at China Agricultural University, postdoctoral at Beijing University of Chemical Technology, and senior visiting scholar at Washington State University.

○ Till now, Dr. Meng has been engaged in

- 2 General Projects of the National Natural Science Foundation of China
- 1 of the 863 Project of Ministry of Science and Technology
- 2 Sub-project of National Key Research and Development Project
- Numbers of scientific research projects of Doctoral Funds of the Ministry of Education and Shaanxi Science and Technology Department

○ Academic Achievements

- Published more than 90 papers, including 30+ SCI papers
- Obtained 53 patents of invention
- Second and Third Sci-tech Awards of Shaanxi Province
- Co-edited two monographs

○ Personal Honors

- Sci-Tech Innovation and Entrepreneurship Talent in Shaanxi Province;
- Director of Shaanxi Agricultural Engineering Association;
- Editor of China Oils and Fats;
- Editor of Chinese Fruits an.

○ Titles

- Professor of the College of Food Engineering and Nutritional Science of Shaanxi Normal University;
- Deputy Director of the High Value-added Fruit Research Center in Western China, Ministry of Education;
- Secretary-General of Shaanxi Food Science and Technology Association;
- Co-founder and CTO of HSF Biotech.

○ Patents

Representative scientific research achievements, projects and patents

Scientific Research Achievements

Preparation of food-grade phytosterol ester by coupling membrane reaction and separation
Preparation of Functional lipid microcapsule powder/microspheres by physical cold spraying and multiple repolymerization
Preparation of natural active substance nanoliposome
Preparation of rice bran oil ferulic acid by high pressure hydrolysis
Green preparation of fatty acid methyl esters and fatty alkanes from low-cost oils
Combined extraction of pectin polyphenols & 100% high-value utilization technology of pomace prepared from apple nano-cellulose materials
Combined extraction of pectin polyphenols & 100% high-value utilization technology of pomace prepared from apple nano-cellulose materials

Typical Research Projects

[1] The total biosynthesis route of based on the rational mutation of FCS/ECH enzyme and its high-yield mechanism
(General Project of National Natural Science Foundation of China 32172145)
[2] The study of the mechanism of Lactobacillus plantarum WCFS1 fermented apple pulp in promoting the biotransformation of conjugated phlorizin based on omics technology
(General Project of National Natural Science Foundation of China 31972089)
[3] Enzymatic synthesis and functional evaluation of hydroxytyrosol oleate lipase
(National Key R&D Program 2019YFD1002405-3)
[4] Preparation and application of ultra-strong broadband absorbing material bio-nanomagnets
(Joint Fund of Military Commission-Ministry of Education 6141A020226)

Our R&D Team

Being committed to the road of technological innovation and technology first, HSF has a team composed of post-doctorates and graduates with strong independent R&D and industrialization background in the fields of biology and food. The company is cooperating with prestigious universities in China, including China Agricultural University, JiangNan University, South China University of Technology, Jinan University, Northeast Agricultural University.

Our joint laboratory with the Food College of Shaanxi Normal University has focused on the study of functional raw materials, and developed numbers of core proprietary technologies in the fields of functional oils, natural antioxidants, carotenoids and micro-encapsulation.

HSF's natural vitamin E and phytosterol esters are widely accepted in the traditional food manufacture. Meanwhile, based on its latest biological bacteria fermentation technology, HSF Biotech has been committed to the R&D of other natural functional ingredients for functional food processing.

Leadership

HSF Biotech is an energetic and promising company that has developed rapidly. Its success is a story of consistent pioneering with modern business philosophy and management models. We are aware that, as to survive in the intense market competition, there is no individual hero, and we believe in the art of teamwork. We have been trying to keep our employees motivated and make the best of each member in pursuit of the corporate goals and mutual individual values.



Aaron Wang

Shareholder, Co-founder,
Marketing Director & COO



Max Meng

Shareholder, Co-founder,
General Manager



Yusong Li

Chairman of the boards,
Shareholder, Co-founder



Mark Meng

Shareholder, Co-founder,
CTO, Professor



Jianqi Guo

Shareholder Co-founder,
Production Director

Part of the Patents

[1] Water-soluble phytosterol unsaturated fatty acid microcapsule and its preparation method

[2] A phytosterol fatty acid ester and its catalytic synthesis method

[3] A method of extracting ferulic acid from rice bran meal

[4] A biological method for extracting natural pectin from pectin plant residues

[5] A method of preparing high purity stigmaterol from phytosterol oleate

[6] A method of preparing root bark erythropoietin with hypolipidemic function

[7] A thin film reaction and the method of preparing phytosterol esters by separation and coupling

[8] A high temperature resistant unsaturated fatty acid oil microcapsule powder and its preparation method

[9] An engineered strain of Rhodobacter sphaeroides which producing β -carotene and its construction method

[10] A kind of all-vegetarian ketogenic weight loss microcapsule powder and its preparation method

[11] A slow-release β -carotene micro-encapsulated powder and its preparation method

[12] A method for continuous preparation of biodiesel, sterols and vitamin E from deodorized distillate of vegetable oil

[13] A method for preparing squalene from deodorized distillates

[14] A natural complex antioxidant for highly unsaturated fatty acid

[15] Method of removing zearalenone from natural vitamin E and the product obtained by this method

[16] A strain of recombinant lipolytic yarrow yeast T30pED with high production of rape oil sterols, its construction method and its application

[17] Phytosterol isostearate and its preparation method

[18] A feed additive for improving the growth potential of animal progeny and its preparation and application

[19] A strain of burkholderia gladioli A1-07 and its uses

[20] A genetically defective type amycolatopsis of high-yielding vanillin, its construction method and application

[21] Recombinant engineered strain of high production tocotrienols, its construction method and application

[22] A γ -tocopherol methyltransferase mutant and its application in improving production of α -tocopherol and α -tocotrienol

[23] GGH gene in improving production of tocopherol, the recombinant lipolytic yarrow yeast of high yielding tocotrienol and its application

[24] A fermentation medium containing fruit pomace enzymatic solution and its application

[25] A phytosterol isostearate microcapsule for aqueous cosmetics

[26] A tocotrienol composition for lowering cholesterol and cardiovascular disease prevention

[27] A natural oil-promoting weight loss composition and its preparation method

Product Series of HSF

- **VegeToc™ Natural Vitamin E**
- **MaxSterol™ Phytosterol**
- **LowChol™ Phytosterol Ester**
- **NatenFla™ Natural Ferulic Acid**
- **SoliPro™ Coating & Granulating Powder**
- **VegeLipi™ Micro-encapsulated Functional Lipid Powder**
- **Fermtek™ HSF Brand for Fermentation**

HSF VegeToc™ Natural Vitamin E Series

HSF Biotech is a leading manufacture of Natural Vitamin E. With the annual capacity of 600mts, we are supplying a full range of vitamin E products, including mixed tocopherols, D-alpha tocopherol, D-alpha acetate and D-alpha succinate and ect. All our products are in manufacturer-friendly forms for capsules, tablets and other applications. Apart from traditional liquid natural vitamin E, we are supplying powder formulations, like mixed tocopherols powder and D-alpha Tocopheryl Acetate Powder, which are specifically designed for certain applications that require for better solubility in cold water, flowing ability and compressibility.

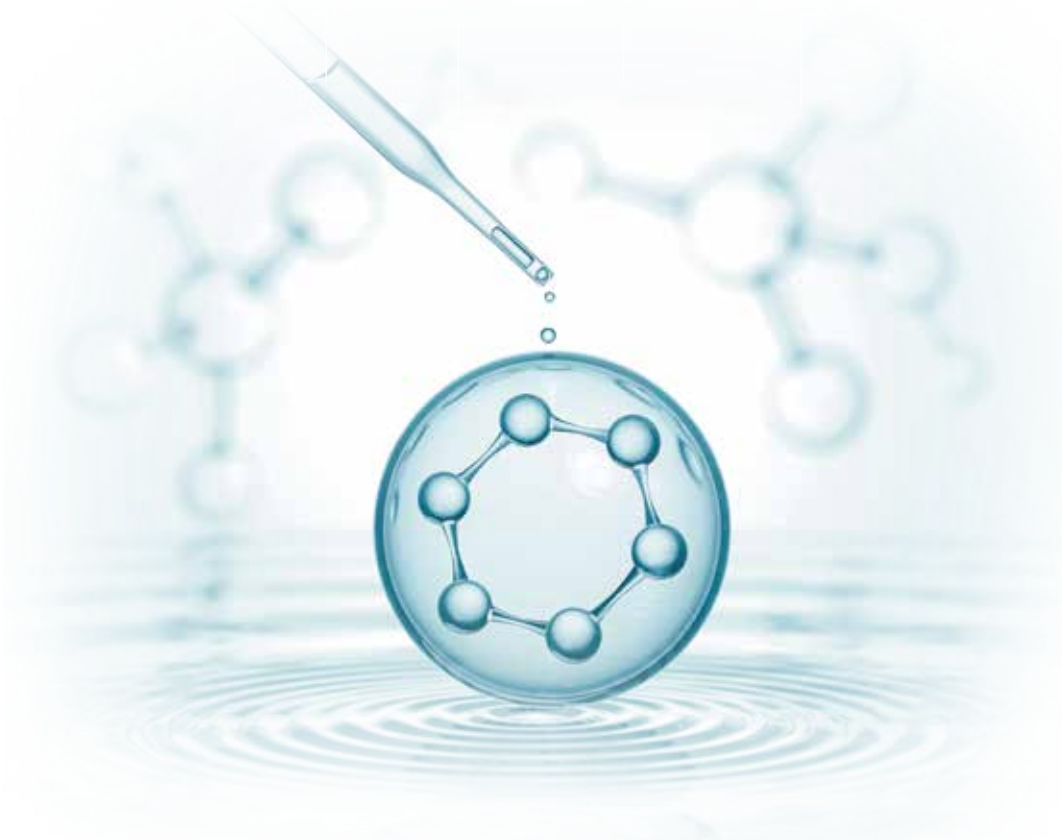
Product	Specifications	Appearance	Package	Applications
VegeToc™ Mixed Tocopherol	50%,70%,90%,95%	Brownish red oil	20/190Kg per Drum, 950kg/2BC	Antioxidants, dietary supplements, animal feed etc.
VegeToc™ Mixed Tocopherol Powder	30%	Pink to off white powder	20Kg/carton	Solid beverages, dietary supplements, animal feed etc.
VegeToc™ D-α Tocopherol Oil	1000IU~1430IU/g	Brownish red oil	20/190Kg per Drum	Dietary supplements, cosmetics ingredients
VegeToc™ D-α Tocopherol Powder	500IU/g	Pale yellow powder	20Kg/carton	Dietary supplements, cosmetics ingredients
VegeToc™ D-α Tocopheryl Acetate Oil	1000IU~1360IU/g	Pale yellow oil	20/190Kg per Drum	Dietary supplements, cosmetics ingredients, soft gel capsules
VegeToc™ D-α Tocopheryl Acetate Powder	700IU, 950IU/g	White Powder or Beadlets	20Kg/carton	Dietary supplements, nutrition enhancement, tablets saches hard capsules etc.
VegeToc™ D-α Tocopheryl Succinate Powder	1185IU/g, 1210IU/g	White Powder or Granular	25Kg/Drum	Dietary supplements, nutrition enhancement, tablets,etc.
VegeToc™-Tocotrienols	70%, 80%	Amber viscous liquid	20Kg/Drum	Anti-Oxidant, Cosmetics, Food/Pharm
VegeToc™-D-delta tocopherol	70%	Brown red to light yellow liquid	20/190Kg per Drum	Anti-Oxidant, Cosmetics, Food/Pharm
VegeToc™-TPGS	25%	Off-white or yellowish waxy solid	5Kg/Tin, 20KG/Drum, 25KG/Drum	Water Soluble Vitamin E, Cosmetics, Food/Pharm

Certified by cGMP, FSSC22000, ISO9001, KOSHER, MUI HALAL & BPJPH, HALAL, FAMI-QS, IP(NON-GMO).

HSF MaxSterol™ Phytosterol Series

HSF Biotech offers a full range of phytosterol products. From soy-sourced phytosterol to pine-based phytosterol products, HSF Biotech's MaxSterol™ series can be used in a wide variety of food preparations as a LDL Cholesterol reducer. It can also be used in cosmetics for its emulsifying and stabilizing properties.

Product	Sourc	Features	Specification	Package	Applications
MaxSterol™ Phytosterols	Soy	Fine Powder	95%	25Kg/Drum	Widely used for functional foods, tablets, hard capsule, and etc.
MaxSterol™ Phytosterols	Pine	Fine Powder	98%	25Kg/Drum	Rich in β -Sitosterol; Widely used for functional foods, tablet, hard capsule, and etc.
MaxSterol™ Stigmasterol	Soy	Fine Powder	90%, 95%	25Kg/Drum	For plant growth regulator, prodrugs, cosmetics usage.
MaxSterol™ β -Sitosterol	Soy/Pine	Fine Powder	60%, 70%	25Kg/Drum	Widely used for functional foods, prodrug, cosmetics and etc.



Certified by cGMP, FSSC22000, ISO9001, KOSHER, HALAL, FAMI-QS, IP(NON-GMO).

HSF LowChol™ Phytosterol Esters Series

HSF Biotech has been the front-runner in the research, development and industrialization of phytosterol ester. For years, the company has been the only qualified manufacturer of phytosterol ester in China and the only one that gained authorization from ADVISORY COMMITTEE ON NOVEL FOODS AND PROCESSES for use of its phytosterols ester as a novel ingredient. Besides, the company participated in the drafting of national industry standards for phytosterol ester.

LowChol™ Phytosterol Ester is an environmental friendly product. During the production, neither solvent nor catalyst is used. Besides, the production process of molecular distillation ensures its impurities and content.

Product	Source	Features	Specifica-tion	Package	Applications
LowChol™-S Phytosterol Ester	Soy	Paste	97%	20/190Kg per Drum	Used for foud additive functional foods
LowChol™-P Phytosterol Ester	Pine	Paste	97%	20/190Kg per Drum	Rich in β-Sitosterol ; Used for functional foods
LowChol™-W Phytosterol Ester Powder CWS	Soy/Pine	Powder	50%	20Kg/carton	Used for functional foods, solid beverages, cosmetics

Patents

Patent	Patent No
The method of extraction of phytosterols from the pinecone by molecular distillation	ZL2014101511080
Synthesis and separation methods of the phytosterol saturated/ unsaturated fatty acid ester	ZL201210019987.2
Micro-encapsulation process of water-soluble phytosterol unsaturated fatty acid	ZL2014101511080
Catalyzed synthesis method of phytosterol ester	ZL201410445798.0



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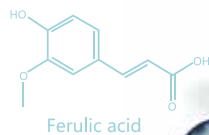
HSF NatenFla™ Natural Ferulic Acid Series

HSF has been devoting itself to R&D natural ferulic acid for decades as one of the earliest factories by using rice bran unsaponifiables. Currently, HSF Biotech is the world top producer of natural ferulic acid. For the first time in the world, HSF utilizes biological enzyme method to transfer and purify natural ferulic acid. As to massively and commercially produce natural ferulic acid, HSF technical team work closely with our upstream raw materials suppliers, helping them improve the processing and optimize facilities, which enabled the raw materials to be a higher purity and lower solvent residual. Comparing with other suppliers, HSF's NatenFla™ natural ferulic is higher in purity, white in color, and higher in bio-transformation rate. HSF's annual capacity of natural ferulic acid is 200MT.

Product	Feature	Specification	Package	Applications
NatenFla™ Natural Ferulic Acid	Fine Powder	98%	20Kg/Drum	Natural Flavor, Anti-Oxidant, Functional Food, cosmetics
NatenFla™ Gamma Oryzanol	Fine Powder	99%	20Kg/Drum	Functional food, Pharmaceutical, Tablet
NatenFla™ Rice Bran Sterol	Fine Powder	90%	20Kg/Drum	Functional food, Pharmaceutical, Tablet

Patents

Patent Title	Patent No
Method of extracting ferulic acid from rice bran	ZL107190028B



Certified by cGMP, FSSC22000, ISO9001, KOSHER, HALAL.

HSF SoliPro™ Coating & Granulating Powders

HSF Biotech's micro-encapsulated solid powder project is an extension, also a supplement, to its existing micro-encapsulated lipid powder production line. The project started in 2019 and put into massive production in May 2020.

With proprietary technologies and state-of-the-art equipment, HSF Biotech SoliPro™ is aiming to make the ingredients have a better improvement on its liquidity, smell, solubility and deliquescent.

SoliPro™ Amino Acids

Product	Specifications	Type	Applications
Branch Chain Amino Acid Powder (BCAA)	2:1:1/4:1:1/ Customized	Instantized/Granular/ Taste-Masking/Sustained Release	Capsule, Tableting, Solid Beverage
EAA Powder	Customized	Instantized/Granular/Taste-Masking/ Sustained Release	Capsule, Tableting, Solid Beverage
L-Leucine	70%~99%	Instantized/Granular/ Taste-Masking/Sustained Release	Capsule, Tableting, Solid Beverage
L-Arginine	70%~99%	Instantized/Granular/ Taste-Masking/Sustained Release	Capsule, Tableting, Solid Beverage
L-Carnitine Base	70%~99%	Instantized/Granular/ Taste-Masking/Sustained Release	Capsule, Tableting, Solid Beverage
L-Glutamine	70%~99%	Instantized/Granular/ Taste-Masking/Sustained Release	Capsule, Tableting, Solid Beverage
Creatine Monohydrate	99%	Powder	Capsule, Solid Beverage
L-α GPC, Moisture proof	50%	Granular	Capsule, Solid Beverage
L-methionine, Taste masking	85%	Granular	Capsule, Solid Beverage
Other customized solid powder products which need to be improved on liquidity, smell, solubility or deliquescent.			Capsule, Tableting, Solid Beverage

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SoliPro™ Other Customized Coating/Granulating Powder Series

Category	Product Name	Specification	Product Type	Application
Amino acids	Gamma-aminobutyric acid/ L-carnitine/Acetylcysteine	Customized	Moisture proof/Taste-Masking / Sustained Release	Capsule, Tablet, Solid Beverage, Liquid beverages
Vitamins	Vitamin B/Vitamin C		Moisture-proof/Taste-Masking	
Minerals	Ferrous sulfate/Ferrous lactate/ Ferrous fumarate etc.		Moisture-proof/Taste-Masking	
Other	Potassium sorbate/HMB calcium		Moisture-proof/Taste-Masking / Sustained Release	

HSF 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.

VegeLipi™ MCT Oil Powder

Product	Specifications	Formulas	Features	Applications
Vegan	MCT-A70	Coconut, MCT Oil (70%, C8:C10=60:40) Carrier: acacia fiber	*Allergen free *Clean label *Sugar free *Dietary fiber	Keto-supplement Weight management Solid beverage Blended porsera
	MCT-A70-OS	Organic MCT Oil (70%, C8:C10=60:40); Carrier: acacia fiber	*Organic *Allergen free *Clean label *Sugar free *Dietary fiber	Keto-supplement Weight management Blended porsera
	MCT-SM50	MCT Oil: (50%, C8:C10=60:40); Carrier: Maltodextrin, Starch sodium octenylsuccinate	*Allergen free *Instant	Solid beverage Blended powders
Non-Vegan	MCT-CI70	MCT Oil: (70%, C8:C10=60:40); Carrier: Isomaltooligosaccharide, Sodium Caseinate	*Dairy formula *Low carbohydrate *Instant	Keto-supplement Weight management Blended porsera
	MCT-CM50	MCT Oil: (50%, C8:C10=60:40); Carrier: Maltodextrin, Sodium Caseinate	*Dairy formula *Instant	Solid beverage Blended powders
Customized	Oil loading from 50% to 70%, C8:C10=70:30, Pure C8			



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H S F

VegeLipi™ Other Micro-encapsulated Functional Lipid Powder

Type	Product	Specifications	Appearance
Functional Lipid Powder	Coconut Oil Powder (Refined/Virgin)	50%, 70%	White to off-white free-flowing powder
	Grass-Fed Butter Powder	70%	
	CLA Powder	60%	
	Diglyceride Oil Powder	50%	
Plant-based Omega-3/6/9	Flaxseed Oil Powder	50%	
	Perilla Oil Powder	50%	
	Sunflower Oil Powder	50%	
	Evening Primrose Oil Powder	50%	
	Borage Oil Powder	50%	
	Safflower Oil Powder	50%	
	Virgin Olive Oil Powder	50%	
High Oleic Acid Sunflower Oil Powder	50%-70%		

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Type	Product	Specifications	Appearance
Special Lipid Powder	Silybum Seed Oil Powder	50%	White to off-white free-flowing powder
	Avocado Oil Powder	50%	
	Hemp Seed Oil Powder	50%	
	Ingot Maple Seed Oil Powder	50%	
	Eucommia Seed Oil Powder	50%	
Customized products (fat-soluble vitamins)	Vitamin A, Vitamin D, Fat-soluble Vitamin K, Coenzyme Q10, etc.	Customized	



Fermtek™ HSF Brand for Fermentation products

Since 2012, HSF has been constantly putting into R&D in our laboratory, with a fermentation group of 15 technical staff led by Professor Meng. With the help of years' ongoing optimization and reserving on microbial strains, HSF invested 4.8 million USD and 9.2 million USD inside HSF's first and second industrial zone, the two individual manufacturing facilities enable HSF to provide medium-sized and large-scale production capacity for microbial fermented products. Meanwhile, HSF can provide customized services and fermented products together with our customers, using our two individual fermentation and extracting facilities. HSF Core Technology for Fermentation Products: Directional Microbial Fermentation Technology, High Efficiency Separation Technology.



FermAlge™

Product	Specification	Packaging	Application
DHA Oil (Docose Hexaenoic Acid Oil)	40%~70%	190Kg/Drum, Customized	Dietary supplements, food&beverages, animal feed etc.
DHA Oil Powder (Docose Hexaenoic Acid Oil Powder)	10%/20%	20Kg/Drum, Customized	Infant formulas, Dietary supplements, food&beverages, animal feed etc.
ARA Oil (Arachidonic Acid Oil)	30%/40%	190Kg/Drum, Customized	Dietary supplements, food&beverages, animal feed etc.
ARA Oil Powder (Arachidonic Acid Oil Powder)	5%/10%	20Kg/Drum, Customized	Infant formulas, Dietary supplements, food&beverages, animal feed etc.

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NutraColour™

Product	Specification	Type	Application
β-Carotene Powder	96%	Fine Powder	Dietary supplements, food&beverages, animal feed etc.
β-Carotene Oil Suspension	20%/30%	Oil Suspension	Soft gel Capsules, Oily Form Products
Micro-encapsulated β-Carotene Powder	10%/20%	Powder/Beadlets	Solid beverage, Tablets, Hard Capsules
Lycopene Powder	96%	Fine Powder	Dietary supplements, food&beverages, animal feed etc.
Lycopene Oil Suspension	6%/10%/20%	Oil Suspension	Soft gel Capsules, Oily Form Products
Micro-encapsulated Lycopene Powder	1%/5%/10%	Powder/Beadlets	Solid beverage, Tablets, Hard Capsules

CoenPrime™

Product	Specification	Type	Application
Coenzyme Q10 Powder 10%	Cold Water Dispersible (CWD)	20Kg/Drum, Customized	Dietary supplements, food&beverages, cosmetics, animal feed etc.
Coenzyme Q10 Powder 10%	Granular	20Kg/Drum, Customized	Dietary supplements, tablets
Coenzyme Q10 Powder 20%	Cold Water Dispersible (CWD)	20Kg/Drum, Customized	Dietary supplements, food&beverages, cosmetics, animal feed etc.
Coenzyme Q10 Powder 40%	Cold Water Dispersible (CWD)	20Kg/Drum, Customized	Dietary supplements, food&beverages, cosmetics,
Coenzyme Q10 Powder 98%	Crystalline Powder	5Kg/Tin, Customized	Animal feed etc. Dietary supplements, cosmetics, animal feed etc.



Certified by cGMP, FSSC22000, ISO9001, KOSHER, HALAL.

// Technical platform

1. Esterification Technology

Apply proprietary technology: Membrane reaction and separation coupling technology. When reactants flow in the form of membrane on the inner wall of the reactor, by-products are removed without any catalyst and the esterification process is completed.

Advantages

- Simple production process
- High product yield
- Continuous esterification and purification
- Energy saving



2. Engineering Bacteria Fermentation Technology

Apply molecular biology and genetic engineering technology in genomic analysis, change the metabolic pathways of industrial microorganisms, obtain high catalytic enzymes, use efficient cell factories, realize industrialized production of high value-added products.

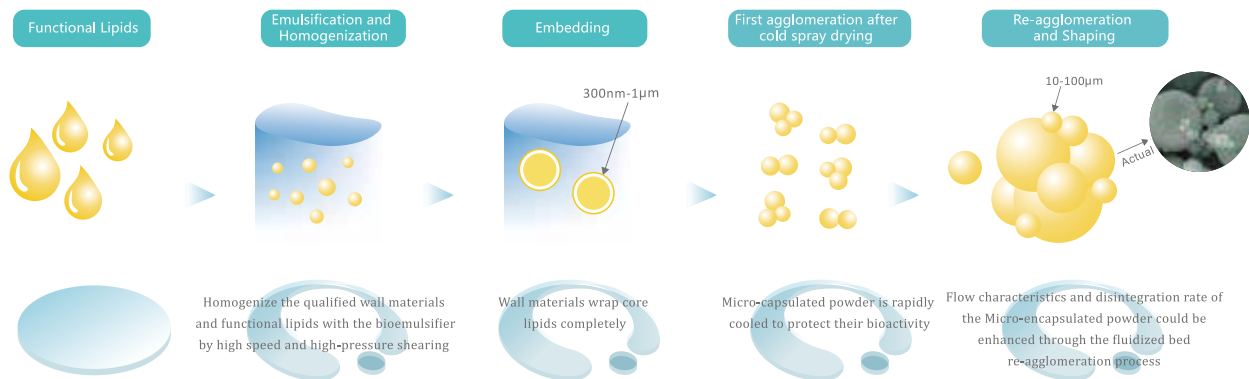
Advantages

- Reduce energy consumption and cost
- Maximum production efficiency
- Environmental protection



// Micro-encapsulation of functional ingredients

Micro-Encapsulation of Functional Liquid



Advantage

Stable Bioactivity

Better Absorption

Odor-masking



Easy Transportation

Cold Water Solubility

3. Functional ingredients Micro-encapsulation Technology

Micro-encapsulation Technology

Apply bipolar emulgator, achieve lipid soluble functional ingredients nano-emulsification by means of ultra-high speed shearing and ultra-high pressure homogenization. Then embedded in food grade materials, after spray drying, finally form micro-capsulated granule.



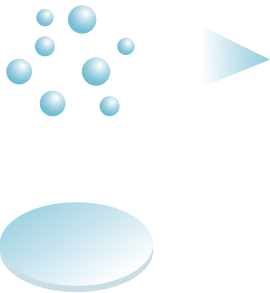
Sustained Release, Pelleting and Coating Technology

Apply pelleting technology in raw powder functional materials to form raw granular functional materials(core materials), then coat the granules through spraying and finally form micro-capsulated granules.

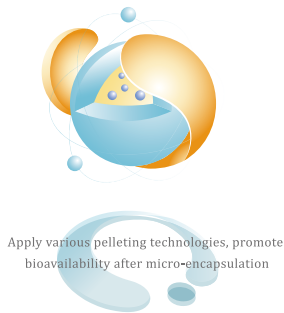


Micro-Encapsulation of Coating & Granulating Powder

Traditional Products



HSF Micro-Encapsulation Coating



HSF Micro-Encapsulation Granulating



Advantages

Better Dispersibility
Stable Performance and Better Taste
Better Flowing Ability and Even Particle Size



Controlled Release
High Mechanical Strength
Good Pre-mixing Performance
Compressible without Oil Leakage

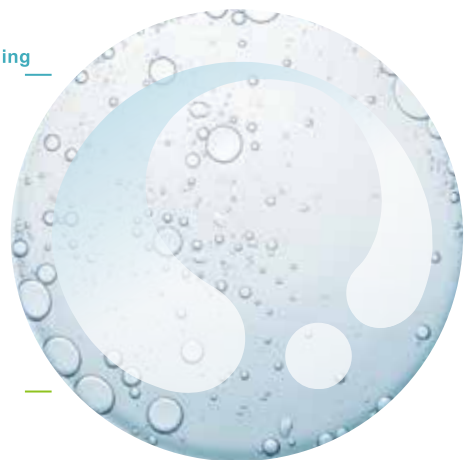
What HSF Biotech Possesses

- ▶ Strong R&D platform and technical staff
- ▶ Years' continuously innovative capability
- ▶ Highly-efficient management team
- ▶ Open and win-win partnerships philosophy
- ▶ Vertically integrated capability of world top functional ingredients manufacturers



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) Fermentation from Micro-bioengineering Bacteria



2 Modern
Manufacturing
Locations

3 R&D Center

42 Professional
R&D staff

4500 m³
Standard Warehouse



Four Models for Product Partnership Development

- 1 Contract Manufacturing
- 2 Customized Formula and Specifications
- 3 Compounding and Premixing
- 4 Patent cooperation, and functional evaluation



Flowing Chart on Product Partnership Development

Step one

Tell us what's your pain point and requests on your products and marketing

Step two

HSF's professional market and R&D teams will negotiate and work with you to customize a product solutions

Step three

Tailoring a specific timetable and schedule for this product development, and provide lab scale and pilot scale samples, contrast samples and related evaluation reports

Step four

Updating and modifying our solutions upon your comments or feedback from samples until you are satisfactory finally

Step five

Working on trademark, patenting, intellectual property protection and functional evaluation, sign agreements with HSF on confidentiality and cooperation

Step six

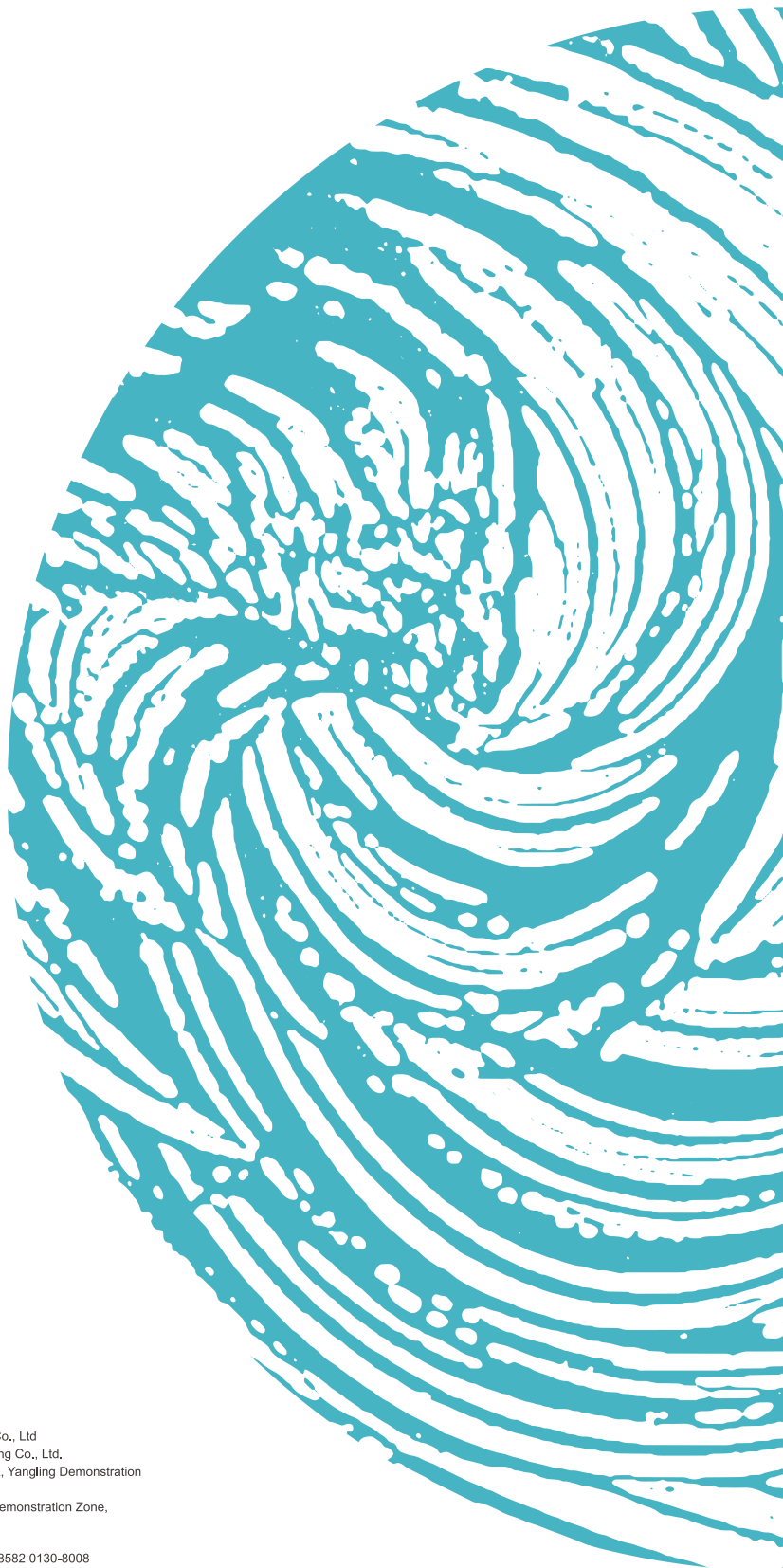
Schedule a massive production, packing and delivery etc. flowing chart, HSF will be open and transparent during the entire progress to you



Facilities of The Core Technologies







Headquarter: Xi'an Healthful Biotechnology Co., Ltd
Manufacture: Shaanxi Healthful Bioengineering Co., Ltd.
Plant 1: C1-C3 Building, Torch Industrial Park, Yangling Demonstration
Zone Shaanxi Province, P.R. China
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Shaanxi Province, P.R. China

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