

High quality – our passion for details.

EVONIK – YOUR PARTNER FOR THE FOOD INDUSTRY.





The power

Evonik stands for attractive business and innovative strength. Our corporate culture is geared toward results, profitable growth, and increasing the value of the company. Operating in over 100 countries, we benefit from close customer relationships and leading market positions. Over 32,000 employees are united by the understanding that no product is so perfect that you can't make it better.

The basis

Evonik provides a comprehensive portfolio of high-performance products for a variety of applications and functionalities in the food industry. Our range of offerings steadily grows through constant development of new products and formulation technologies. We heavily invest in the food segment, which we recognize as one of our most important growth fields.

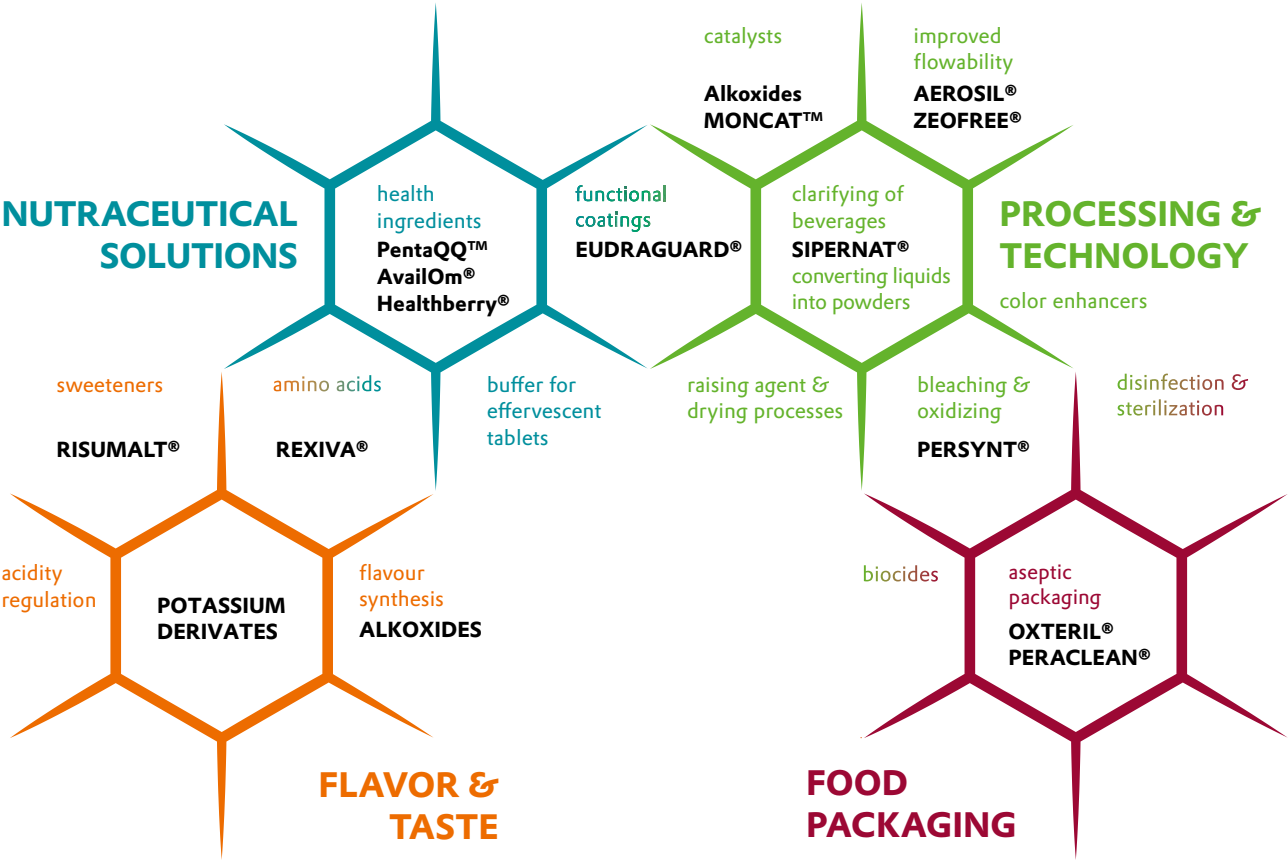
To further progress in this area, we have established a specialized innovation team focused solely on the creation of new products. Today, as a result of our decades of experience, we are able to offer a multitude of solutions for advanced nutritional needs.

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Whatever your requirements, Evonik has a solution to meet the food industry challenges of today. To develop and improve your products, our global formulation experts provide ingredients and formulation services tailored to your specific needs – no matter where you are located in the world.

Evonik is committed to increasing the value of your food business as well as your brand through forward-looking technologies, products and services.

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FACILITATE YOUR POWDER FLOW WITH SILICA

EASY.
JUST LIKE
HAVING
BREAKFAST.



EASY AND CONVENIENT POWDER PROCESSING.

Convenient food products at high quality standards and reasonable manufacturing costs are becoming more and more important. Our SIPERNAT®, ZEOFREE® or AEROSIL® food products help to improve your manufacturing and productivity:

- Optimized powder flow
- Reduced & minimized caking
- Precise dosing
- Efficient milling & spray drying
- Easy transformation of liquids into powders

Silica – the multi-talent in food

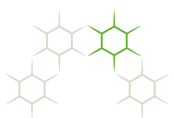
Numerous applications benefit from using silica.

Powdered food

Due to their fine particle sizes or stickiness, some powders show poor flow properties and cake during storage, which makes handling difficult. When adding our SIPERNAT®, ZEOFREE® or AEROSIL® food grades to

- seasoning & spices
- flavors
- dairy powder
- instant products, amongst others,

processing of a food product will be facilitated and more economic. At the same time, consumers benefit from consistent food and taste quality while maintaining the original powder texture as if produced only yesterday.





Nutraceuticals

Good flowability of a powder is a prerequisite of accurate and controlled dosing. For nutraceuticals, such as

- functional foods
- supplements

the addition of SIPERNAT®, ZEOFREE® or AEROSIL® food grades ensure accurate distribution of the nutrients and vitamins resulting in an important contribution to consumers health.

Quality and regulatory

Specific production sites are certified to:

- ISO 9001, ISO 14001
- FAMI-QS/HACCP
- Kosher & Halal

Our SIPERNAT®, ZEOFREE® or AEROSIL® food grades comply with:

- Specification for food additives in Europe (E 551)
- Specific citations in the United States Food and Drug Administration (FDA) regulations as mentioned in 21 CFR parts 170-199
- Specification of FCC (Food Chemical Codex)

CONTACT

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COATINGS AND FORMULATION SERVICES

EFFICACY: AS A MATTER OF COURSE.



TARGETED DELIVERY SYSTEMS AS KEY TO EFFECTIVE NUTRITIONAL SUPPLY.

With personal health awareness and health care costs on the rise, consumers increasingly rely on nutraceuticals to improve overall well-being and to address or prevent specific health conditions. Accordingly, consumers are looking for nutraceutical products that:

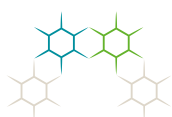
- Deliver maximum potency and efficacy
- Are pleasant to consume
- Are delivered to the right absorption site in the body

Achieving reliable targeted delivery has been a major challenge in nutraceuticals to date – EUDRAGUARD® targeted delivery systems provide an effective solution.

EUDRAGUARD® coatings

A basis for next generation consumer products:

- Boosting bioavailability: Health ingredients can be released at the right time and at the right location where they are absorbed best, e.g. ingredients may require gastric resistance or gastro retention
- Increasing consumer convenience: Taste and odor masking of bitter substances, enteric release of fish oil to avoid fishy burps, etc.
- Differentiation: Sustained or extended release profiles according to your requirements, e.g. 'one-per-day'





Formulation services

Support for the challenges you are facing, from the beginning of the process to the final manufactured product:

- Individual formulation development
- Feasibility trials, scale-up or production
- More than 10 applications labs in all major markets
- In-house seminars for your technical experts
- Workshops
- Broad range of analytical services to ensure the quality of your product

Quality and regulatory

We maintain the highest food quality standards by strict adherence to legislation and even beyond.

- Produced under HACCP
- Non-GMO and of non-animal origin
- Made in the EU
- Regulatory approval in the main markets in EU, US, Asia and Latin America achieved or initiated

CONTACT

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HEALTH INGREDIENTS

BOOST YOUR HEALTH.

NATURALLY OCCURRING COMPOUNDS WITH PROVEN HEALTH BENEFITS.

Evonik provides a range of health ingredients and is constantly expanding their offerings while focusing on selected health areas such as cognitive health, cardiovascular health, diabetes prevention, gut health and liver health.



Amino Acids for cardiovascular health, liver health cognitive health and gut health – REXIVA®

- Highly purified amino acids customized for all nutritional applications including infant nutrition
- Full supply security due to backward integration
- In compliance with USP, FCC, Codex Alimentarius

Omega-3 Lysine complex for cardiovascular health and cognitive health – AvailOm®

- Superior bioavailability
- Ingredient is a dry powder: superior stability, easy handling and direct compressibility for tablet applications
- Opportunity to formulate next generation consumer products for improved convenience: E. g. smaller dosage forms, gelatin-free and clean label consumer products





Pyrrroloquinoline quinone (PQQ) for cardiovascular health and cognitive health – PentaQQ™

- Stable and reliable supply
- To improve bioavailability Evonik leverages its toolbox for targeted delivery
- Exemplary formulations for sustained delivery available, tailoring to customer requirements possible

Isomalt for diabetes prevention – RISUMALT®

- A sugar replacer naturally derived from sugar
- Suitable for the production of sugar free hard-boiled candies and gums, food supplements, desserts and beverages
- Major benefits such as non-calorigenic, very low glycemic index and excellent shelf life properties

Anthocyanin-rich berry extract for cardiovascular health, diabetes prevention and much more – Healthberry®

- Natural anthocyanin mixture consisting of the main anthocyanins occurring in bilberries and blackcurrants
- Strong scientific foundation: Several independent human, cell line and animal trials performed
- Unique, patent protected production process with standardized quality supply

Quality and regulatory

Our health ingredients fulfill the highest quality standards.

- Produced under HACCP and food-GMP
- No labeling requirements for allergens or GMO
- Regulatory status per product and country can be given on demand (products are available in the main markets)

CONTACT

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POTASSIUM DERIVATIVES

BALANCE YOUR
PRODUCTS.



VERSATILE INGREDIENTS AND ADDITIVES USED IN
THE FOOD, BEVERAGE AND PHARMA INDUSTRY.

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Products

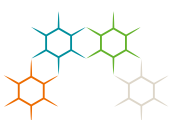
- Potassium Hydroxide
- Potassium Carbonate
- Potassium Bicarbonate

Functions

- pH-adjustment
- Leavening agent
- Drying agent
- Color enhancer
- Source of CO₂

Additional value

- Sodium reduction
- Essential nutrient





Exemplary Applications

Bakery

As a leavening agent, Potassium Bicarbonate is a healthy alternative – reduced sodium content in your products will help your customers to achieve an improved diet and lifestyle.

Dried fruits

Potassium Carbonate removes the waxy layer from fruits like grapes – an easy and modern way to initiate a controlled and "time-optimized drying process".

Cocoa

Treatment of cocoa beans with Potassium Carbonate removes bitter tasting substances and enhances flavor as well as the solubility of cocoa powder.

Wine deacidification

Potassium Bicarbonate lowers the acidity of wine by removing tartaric acid.

Nutraceuticals and effervescent

In addition to fortifying effervescent tablets with valuable Potassium, Bicarbonate puts the right fizz in your drink. Potassium derivatives in isotonic drinks provide the necessary electrolytes after a strenuous workout.

Ramen noodles

Potassium Carbonate gives your noodles the right color and texture.

Quality and regulatory

- ISO 9001, ISO 14001
- HACCP
- Kosher & Halal
- Vegan, no allergens
- GFSI certified (FSSC2200)
- Regulatory Status per product can be viewed online or provided upon request

CONTACT

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SODIUM REDUCTION

TOO SALTY FOR YOU?

IN ORDER TO ACHIEVE THE
RIGHT ELECTROLYTE BALANCE,
MOST PEOPLE NEED MORE
POTASSIUM IN THEIR DIET. THEY
ONLY GET ABOUT 1/2 OF THE
RECOMMENDED 4700 MG/DAY

1 BILLION

estimated number
of people with
hypertension

Most people consume

2-3 X

the recommended daily sodium
intake of 2300 mg



HIGH SODIUM FOOD PRODUCTS

Breads, pasta and cereals



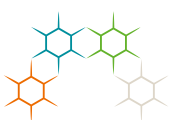
Frozen meals



Soups

BALANCE IS NEEDED FOR FOOD FORMULATIONS
BETWEEN FUNCTIONALITY, TASTE, AND HEALTH

Potassium Bicarbonate is a sodium-free baking agent for baking. But not only that; potassium hydrogen carbonate in baking powder also helps to maintain a healthy balance of minerals in the body. Thus, potassium bicarbonate also makes an important contribution to our health, as potassium is a vital mineral that controls important cell functions. The right dose of potassium helps maintain normal blood pressure and so reduces the risk of heart disease. The diet of many people is characterized by too high an intake of sodium, e. g. through table salt. This results in the ratio of sodium to potassium ions in the body not being properly balanced. There are already government initiatives in over 35 countries around the world that support the increased use of potassium salts such as Potassium Bicarbonate in food.

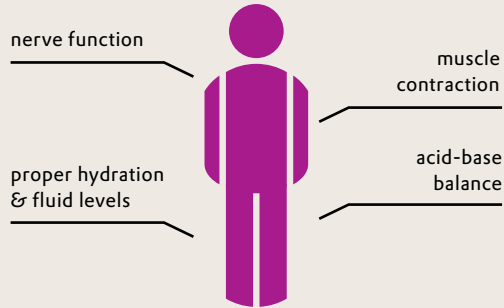




Potassium reduces blood pressure, risk of stroke and heart disease



**SODIUM & POTASSIUM
BOTH NECESSARY ELECTROLYTES**



35+



countries with sodium reduction initiatives

Dairy products



Processed meats and cheeses

Dressings and condiments



Snacks

Reduction incentives started with **POTASSIUM CHLORIDE** but **TASTE** limits application



WHO, EU, FDA, FSA etc. all have reduction guidelines

Make it Work With Evonik's Portfolio of Potassium Derivatives

Our Products

- Potassium Hydroxide
- Potassium Carbonate
- Potassium Bicarbonate

Functions

- pH adjustment
- Leavening agent
- Drying agent
- Color enhancer
- Source of CO₂

Quality and regulatory

- ISO 9001, ISO 14001
- HACCP
- Kosher & Halal
- Vegan, no allergens
- GFSI certified (FSSC2200)
- Regulatory Status per product can be viewed online or provided upon request

CONTACT

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DISINFECTANTS AND BLEACHES

DEFINITELY
SAFE.



HYDROGEN PEROXIDE AND PERACETIC ACID FOR
YOUR FOOD & BEVERAGE APPLICATION.

Aseptic packaging

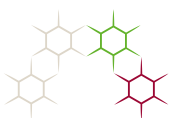
Evonik has been a partner and reliable supplier to the aseptic packaging industry for a long time. In addition to outstanding product quality and technical service, we focus on:

- Continuous innovation in close cooperation with customers and leading aseptic machine manufacturers
- Product approvals and recommendations by major packaging machine manufacturers

A vast variety of food and beverage products are aseptically packaged utilizing hydrogen peroxide or peracetic acid for the sterilization of the packaging material and machines.

Evonik offers two solutions specially designed for state-of-the-art aseptic packaging technologies:

- **OXTERIL®**: a 35 % aqueous solution of highly purified high quality hydrogen peroxide, developed for immersion, spray or vaporization aseptic packaging technologies
- **PERACLEAN®**: a highly efficient aqueous peracetic acid solution for cold aseptic packaging technology, used for the sterilization of plastic bottles





Food processing

Evonik supplies hydrogen peroxide based OXTERIL® and PERSYNT® grades as well as PERACLEAN® peracetic acid grades for a wide range of food processing applications such as:

- Bleaching/color adjustment of raw materials and final products (e.g. natural oils, waxes, gums, natural sugars and starches, herring, instant tea and more)
- Processing and/or fermentation of non-sterile raw materials (e.g. sugar, starch)
- Processing aid for natural proteins or carbohydrates (collagen or starch) or milk for cheese production
- Disinfection or sterilization of equipment, surfaces, slaughterhouses, tanks and pipes (e.g. in food & beverage production)
- CIP- or SIP-installations (cleaning or sterilization in place)
- Antimicrobial agent for food contact (e.g. for whole or cut meat & poultry carcasses)

Quality and regulatory

OXTERIL® and PERSYNT® comply with the requirements of:

- the European Pharmacopoeia
- the German Drinking Water Directive (EN DIN 902)
- the American Food Chemical Codex (FCC)

In Europe, OXTERIL® and PERACLEAN® are supported in the framework of the Regulation (EU) 528/2012 concerning the making available on the market and use of biocidal products.

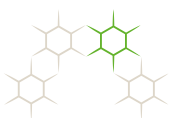
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ALKOXIDES

TOO ACIDIC
FOR YOU?

LET'S TALK
ALKALINITY.



ALKOXIDES: INALIENABLE CATALYSTS OR INITIATORS FOR A BROAD SET OF CHEMICAL REACTIONS.

Fish Oil

Polyunsaturated fatty acid ethyl esters (PUFA-EE) can be obtained from fish oil with the help of Sodium Ethylate (NE 21). The esters are sold as concentrated nutritional supplements or used as raw material for the synthesis of "new" triglyceride with Omega 3 contents up to 90%.

Margarine

Formation of trans fatty acid in the fat hardening process of margarine production can be avoided by an interesterification step of an oil mixture in the presence of Sodium Methylate (NMP).

Menthol

The flavor Menthol requires the catalyst Sodium Methylate in production.

Vitamin A

Sodium Methylate is the catalyst of choice in Vitamin A synthesis. The catalyst initiates a condensation reaction.

Quality and regulatory

- ISO 9001, 14001
- Kosher & Halal
- In line with codex alimentarius

CONTACT

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CATALYSTS

HYDROGENATION OF EDIBLE OILS.

Edible oils are mainly vegetable oils which have been subjected to several processes to remove undesirable constituents. In order to make them suitable for human consumption, most edible oils are subjected to refining processes, such as neutralization, bleaching, deodorization and hydrogenation.

MONCAT™ 2021 was developed because the hydrogenation of oils and fats requires a special kind of supported nickel catalyst. This catalyst offers certain characteristics, such as:

- Free of water
- Easy to handle
- Features excellent conversion rates combined with high yields of the desired products

These catalysts are sold for the hydrogenation of oils and fats in every major vegetable oil producing and/or processing country in the world, they are used successfully in the manufacture of:

- Cooking & salad oils
- Margarines
- Ghee
- Coating & specialty fats

Hydrogenated edible oils are functional foods with a high shelf stability that have become a staple for many diets around the world and MONCAT™ 2021 is the catalyst of choice for producing them.

Quality and regulatory

- Kosher & Halal

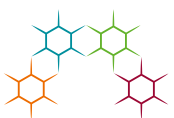
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STABILIZING OILS AND FATS.

**INNOVATION
SOLUTION
PROVIDER**

**SCIENCE TO
BUSINESS.**



flavor & taste / nutraceutical solutions / food packaging / processing & technology



INNOVATIVE PRODUCT SOLUTIONS.

With our strategic innovation unit Creavis, we support the vision of Evonik to become one of the world's most innovative companies with medium to long-term innovation projects and disruptive research.

Together with our internal and external partners we bring the science into business while addressing all aspects of sustainability: people, planet, profit. Our focus is on emerging innovation areas and new business options for Evonik.

In our Innovation Field Food Solutions we enable new business opportunities in the field of advanced food ingredients with:

- Disruptive technologies and biotechnology processes
- New products and applications
- The implementation of alternative raw material concepts

With our strong focus on innovation we can bring you to a new level of products and applications for the food industry.

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This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

AEROSIL® – reg. trademark of Evonik Industries AG and its subsidiaries

AvailOm® – reg. trademark of Evonik Industries AG and its subsidiaries

EUDRAGUARD® – reg. trademark of Evonik Industries AG and its subsidiaries

Healthberry® – reg. trademark of Evonik Industries AG and its subsidiaries

MONCAT™ – trademark of Evonik Industries AG and its subsidiaries

OXTERIL® – reg. trademark of Evonik Industries AG and its subsidiaries

PentaQQ™ – trademark of Evonik Industries AG and its subsidiaries

PERACLEAN® – reg. trademark of Evonik Industries AG and its subsidiaries

PERSYNT® – reg. trademark of Evonik Industries AG and its subsidiaries

REXIVA® – reg. trademark of Evonik Industries AG and its subsidiaries

RISUMALT® – reg. trademark of Evonik Industries AG and its subsidiaries

SIPERNAT® – reg. trademark of Evonik Industries AG and its subsidiaries

ZEROFREE® – reg. trademark of Evonik Industries AG and its subsidiaries

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