

CONCENTRATED COMPETENCE: THE TECHNOLOGY CENTRE OF THE STERN-WYWIOL GRUPPE

Ten laboratories for interdisciplinary
research and applications technology



Mühlenchemie

DeutscheBack

SternEnzym

SternVitamin

Hydrosol

OlbrichtArom

HERZA

SternLife

SternMaid

Sternchemie

Berg + Schmidt



STERNWYWIOL
Gruppe

Innovative Ingredients

ENZYMES

"At our enzyme laboratory we have created an infrastructure that enables us to choose suitable components from hundreds of enzymes. These we modify and put together in the form of individual solutions. We regard ourselves as enzyme designers."



Dr. Lutz Popper
Scientific Director

One of our core competences is developing enzymes and enzyme systems with precisely defined properties. Our company Mühlenchemie is a pioneer in the development of enzymes for flour treatment.

In cooperation with universities and partner firms we develop bacteria strains of our own for enzyme production. We process the resulting concentrates of special enzymes and standard enzyme preparations to make up multi-enzyme complexes for use in the production of baked goods, pasta or sweets and also beer and spirits. We test these enzyme compounds for their functionality and adjust them to meet our customers' needs.

One of the latest innovations from our enzyme research is sulphhydryl oxidase, an enzyme for crosslinking proteins. Several patent applications have been filed already or are currently being prepared.

FLOUR IMPROVERS

"At our analytical baking laboratory we find new solutions for optimizing flour. By making a complete analysis of the flour we

determine its characteristic data and rheological properties and complement these by testing its reaction to baking."

Every year, 400 million tons of wheat are processed to make bread, biscuits and pasta. But cereals are subject to major quality fluctuations. We help to make flours with consistently good baking properties, and in some cases we fortify them with vitamins and minerals. We analyze cereal products with the latest generation of technical equipment. Our specialists use the results to give customers from over 100 countries recommendations they can implement directly in their production processes.



Olaf Gerken
Head of the Baking Laboratory



Christoph Schricke
Head of Flour Treatment

BAKING INGREDIENTS

"Individual convenience ingredients for baking are becoming more and more important for the efficient production of baked goods. We have a very well equipped trial bakery where we can simulate practically any bakery product in the world. It enables us to find a customized solution to meet any challenge."



Michael Strotmann
Applications Manager,
Bread/Rolls



Our trial bakery for bread and pastry goods is equipped with the latest machines and testing devices. We use it to make fresh, refrigerated and frozen baked goods of all kinds. The focus of our specialist product development is on simulating a wide variety of production processes from different countries. Our work is supported by rheological, chemical and biochemical analyses of the flours used and the other raw materials in the adjacent Mühlenchemie laboratory.

DAIRY PRODUCTS AND ICE CREAM

"We give dairy products and ice cream the individual look and feel consumers expect of branded products. To do that we control texture, flavour and appearance with systems made up of a diversity of active ingredients whose functionalities have synergistic effects."

In our technical department for dairy products and ice cream we develop tailor-made stabilizing systems. Our modern pilot plant includes a UHT tubular heat exchanger for yoghurt, pudding and similar products, a UHT device for highly viscous foods like processed cheese, a whipping machine for mousse, various emulsifying machines with direct or indirect heating for cream cheese, and also high-pressure homogenizers and an ice freezer. Our specialists then apply the results of our trials to the industrial-scale plant at our customers' factories.



Thies J. Meier
Head of Research & Development,
Dairy Products, Ice Cream and
Deli Food

DELICATESSEN SPECIALITIES

"Consumers are extremely particular about the quality and diversity of deli specialities, but manufacturers are experiencing financial pressure to rationalize production methods. In order to meet the demands of both sides we develop complexes of active ingredients for ready meals, soups, sauces, ketchups, mayonnaises and dressings in our own technical trials department."

Our technical department is equipped with the latest devices and pilot plant for making many delicatessen specialities: mixing and emulsifying machines for mayonnaises and sauces, autoclaves for sterilized ready meals and tubular heat exchangers with high-pressure homogenizers for UHT sauces and soups are just a few examples. Our company Hydrosol draws on years of experience in formulations, process technology and the interactions of raw materials to create tailor-made stabilizing and texturizing systems. Highlights of this work include hydrocolloidal filling aids for ready meals, functional systems for deli salads and dressings and our dried hydrocolloid/egg compounds for the mayonnaise industry.

MEAT AND SAUSAGE PRODUCTS

"Our customers want to manufacture top-quality meat and sausage products at economical prices. We develop functional



Rolf Bialek
Applications Manager,
Deli Food



systems geared specifically to these requirements. In particular we offer innovative solutions for restructured meat products and for prolonging the shelf-life of meat and sausage."



Friedemann Nau
Head of Product Development,
Meat Products

Besides optimizing the shelf-life of products and creating efficient meat binding systems for convenience products, our core competences include developing sausage and ham specialities: French gourmet ham, finest quality German ham, English sandwich ham, Arabian poultry products, Italian pizza ham or Russian ham specialities. In our meat laboratory we develop special injection additives for these applications and recipes that we can modify and optimize as the customer wishes.

For our practical tests we have access to a large number of selected raw materials such as animal and vegetable proteins, thickening and gelling hydrocolloids, flavouring agents and phosphates. Besides a vacuum cutter and a micro-cutter, the meat department's technical equipment includes a combined cooking and smoking plant. In the large cold store we can test additives for ham injection at different temperatures with a 76-needle injector and a tumbler.

VITAMINS AND MINERALS

"A team of experienced specialists is needed to design vitamin premixes and mineral mixtures for fortifying basic foods and other products such as baby food, cereals, beverages, dairy products

or food supplements and test them for their intended applications."



Dr. Sabine Hildebrandt
Head of Research and
Development,
Vitamins and Minerals

When developing vitamin mixtures we have to consider technological requirements such as the method of preparation and also nutritional aspects and the bioavailability of the vitamin and mineral compounds as well as our customers' wishes.

To do this we have compiled comprehensive information and know-how on active ingredients and carriers, food law, nutritional science and food technology. We test the fortification of new products with vitamins and minerals and prepare suggestions for affordable premixes. Compounding different vitamins, minerals, trace elements and amino acids is a discipline all of its own and demands a high degree of competence. We have built a pharmaceutical-type premix blending line specially for this purpose.

FOOD SUPPLEMENTS

"Our laboratories offer excellent working conditions for the extensive analyses and tests needed for developing health and wellness products. We produce soy drinks, drinking gelatine, base powders, de-oiled lecithin granulate, dietetic products, protein drinks for athletes, dry isotonic beverage



Astrid Pomrehn
Product Development,
Food Supplements



bases and various types of functional bars – all in top quality.”

Nutritionally valuable food supplements must have a pleasant flavour so that consumers are willing to buy them regularly. We taste the products – often together with our customers – to adjust the flavour, texture and form of administration to the proposed target group, taking regional preferences into account. The development and production of functional bars is part of our core business.

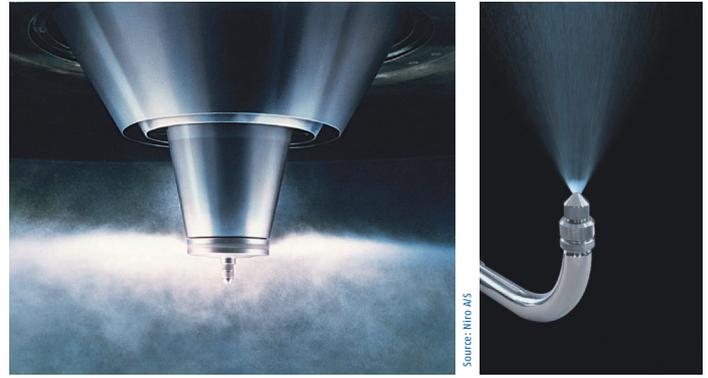
LIPIDS AND LECITHIN

“In the field of vegetable lipids and lecithins, especially, applications research is essential as a basis for innovation. Our work covers both human and animal nutrition.”



Dr. Roland Adelman
Head of Product Development,
Lipids and Lecithin

In order to develop and enhance lecithin specialities and combinations of lipids we have a laboratory fitted with analytical equipment for quality control and numerous testing devices. Extensive trials on our pilot plant with hot and cold spraying technology enable us to devise customized solutions for converting oily substances into powder or crystalline structures with improved functionalities.



SPRAYING TECHNOLOGY

“On our trial spraying plant, that can be configured individually, our experts from the various disciplines carry out extensive tests for developing powdered products and optimizing formulations. We produce samples under realistic manufacturing conditions so that it is easy to up-scale them for industrial plant.”

Our pilot spraying plant can be used for spray drying, spray crystallization and micro-encapsulation. In the spray drying process, aqueous solutions, suspensions or emulsions are dried to form a powder – efficiently and at moderate temperatures. We control the release of encapsulated substances by carefully selecting and combining suitable protective materials. Precise and reproducible temperature adjustment enables us to dry even heat-sensitive ingredients, and by varying the process parameters we can also influence the particle size distribution.



THE COMPANIES AND THEIR SPECIALIST FIELDS



Flour Improvers
www.muehlenchemie.de



Baking Ingredients
www.deutscheback.de



Enzyme Systems
www.sternenzym.de



Vitamin and Mineral Premixes
www.sternvitamin.de



Stabilizing Systems
www.hydrosol.de



Flavourings and Natural Fruit Pastes
www.olbrichtarom.de



Chocolate, Bars
www.herza.de



Food Supplements
www.sternlife.de



Blending, Filling, Processing
www.sternmaid.de



Food Lipids
www.sternchemie.de



Feed Additives
www.berg-schmidt.de



Oleochemical Specialities
www.berg-schmidt.de





STERNWYWIOL
Gruppe

Innovative Ingredients

**THE TECHNOLOGY CENTRE OF THE STERN-WYWIOL GRUPPE:
FIRST WE ASK WHAT OUR CUSTOMERS NEED,
THEN WE DEVELOP NEW INGREDIENTS FOR THEM.**

The Technology Centre in Ahrensburg, near Hamburg, is run jointly on a centralized basis by the eleven specialist ingredients companies in the Stern-Wywiol Gruppe. The architecturally distinctive building was designed to meet our specific requirements and offers an ideal environment for innovation. Interdisciplinary cooperation and a broad view of the ingredients world are part of our everyday philosophy. Short routes and a spirit of partnership in our work are one of the keys to our good results.

Our group stands for innovative solutions geared exactly to our customers' individual needs. Such a business model demands

a high level of competence and extensive knowledge. But equally it demands a passion for development and the will to go on optimizing each innovation until it is ready for practical use. At our Technology Centre we have created excellent conditions for meeting these requirements every time.

Get to know us and our Technology Centre personally. We invite you to make a tour of the laboratories. Come and visit us, and talk to our experts about your ideas and wishes.



COME AND SEE WHAT OUR APPLICATIONS EXPERTS CAN DO: VISIT OUR TECHNOLOGY CENTRE!

The ingredients companies of the Stern-Wywiol Gruppe regard themselves primarily as customer-oriented service providers. Our research and development goes hand in hand with dialogue with our customers in a spirit of partnership. This close contact enables us to find quick and efficient solutions for clearly defined frames of reference.

See for yourself what we can do for you. Arrange an appointment for a visit, and find out what concrete competitive advantages our experts from the Technology Centre can achieve for you.

Phone us at **+49 / (0) 41 02 / 202-001**, or send an e-mail to **info@stern-wywiol-gruppe.de**
We are looking forward to hearing from you.



In-house training courses for customers and staff are held regularly at the Technology Centre.

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Outside view of our Technology Centre

