We are experts in emulsifiers and stabilizers for bakery, confectionery, dairy, ice cream, margarine and fine foods - and we are happy to share our expertise. Our company values can be defined in just three words: loyalty, responsibility and commitment.

Loyalty means that we act as a reliable and honourable business partner for our customers. We treat information confidentially and know how to keep a business secret. In Palsgaard, responsibility means caring about the environment and being aware of our corporate social responsibility. We have a goal to be CO₂ neutral by 2020 and are members of SEDEX and RSPO.

Commitment means we are dedicated to getting the best results for our customers' products - to the benefit of their customers. We care about our employees and have a declared aim that Palsgaard must be a pleasant place to work. Palsgaard means that our most important resource is the knowledge and dedication found in our employees. Heart work is the best way to achieve success - let us help you do so.

In Palsgaard, working people

Emulsifiers and stabilizers for ice cream
Ice cream is the most popular dairy dessert all over the world. However, consumer preferences in creaminess, flavour release, mouthfeel, etc. differ. A high level of market knowledge and product development is therefore required to meet the consumer’s expectations.

Industrial production of ice cream requires high quality raw materials, combined with innovative and well-balanced recipes as well as controlled processing.

To help you meet the market requirements, our highly skilled and experienced ice cream technicians are committed to providing you with only the best solutions. We keep track of new product developments as well as production processes through our network of subsidiaries and partners all over the world.

We help you to solve technical problems and develop products that precisely meet your customer’s expectations. With pilot plants in Denmark, China, Mexico and Singapore, it is possible to test your products prior to large-scale production.
Product development anchored in the consumer’s desires

Palsgaard emulsifier and stabilizer programme

Emulsifiers and stabilizers merely make up minor parts of the ice cream, however, they have a significant impact on the quality of the final products.

**To obtain a high-quality ice cream, it is important to control carefully the**
- quality of the emulsifiers and stabilizers
- quality of the raw materials
- composition of the recipe
- manufacturing procedure
- distribution and storage conditions

Whether you prefer pure emulsifiers or integrated blends of emulsifiers and stabilizers, Palsgaard offers you a broad range of products.

**Emulsifiers**
Palsgaard offers the full range of emulsifiers applied in ice cream. The emulsifiers have a crucial impact on the sensory characteristics of the final ice cream product. In addition, melting resistance and storage stability are influenced by the emulsifiers. Palsgaard assists you to select and combine the emulsifiers, resulting in the final ice cream required by the consumer.

**Stabilizers**
The stabilizers influence the formation and growth of ice crystals. Moreover, the combination of stabilizers determines the sensory profile of the ice cream, helping you meet the exact demands of the consumer.

**Integrated emulsifiers and stabilizers**
Palsgaard offers ready-mixed emulsifiers and stabilizers as unique integrated products. The suspension of stabilizers in the melted emulsifiers, followed by an advanced spray crystallization process, transforms the product into a uniform, free-flowing powder.

**Compared to plain dry blends, the advantages of Palsgaard’s integrated products are primarily**
- correct proportionate dosage of emulsifiers and stabilizers
- free-flowing, uniform powder
- dust-free handling
- dispersibility at low temperatures
- no pre-mixing with other dry ingredients required before addition to the ice cream mix
Applications and benefits of Palsgaard integrated products

<table>
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<tr>
<th>Standard ice cream</th>
<th>Premium ice cream</th>
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| Palsgaard offers a range of integrated emulsifiers and stabilizers for use in moulded products such as  
  - family packs  
  - stick ice cream  
  - cups and cones  
  - soft serve ice cream  
  - soft scoop ice cream  
| Premium ice cream is characterized by a very creamy and rich texture and mouthfeel. These properties are obtained by optimizing the ingredients as well as the emulsifier/stabilizer system.  
  **Palsgaard’s integrated emulsifiers and stabilizers improve the**  
  - creamy mouthfeel  
  - smooth texture  
  - rich body  
  - shape retention  
  - meltdown properties  
  - heat shock and storage stability |

The integrated emulsifier/stabilizer composition can be optimized to meet the requirements of  
- mouthfeel  
- texture and body  
- stand-up properties  
- meltdown properties  
- heat shock and storage stability
The use of extrusion technology to produce novelties such as “funny face” ice cream, cones with decorated tops or multi-layered desserts requires emulsifier/stabilizer systems designed to improve the stand-up and meltdown properties of the ice cream.

**Palsgaard’s integrated emulsifiers/stabilizers improve the**
- dryness of the surface, when leaving the freezer
- shape retention
- mouthfeel
- texture and body
- meltdown resistance
- heat shock and storage stability

**Ice cream with improved meltdown resistance**
High-tech spray-cooling facilities enable Palsgaard to offer integrated blends of emulsifiers and stabilizers with improved functionalities:
- controlled churning-out during freezing and aeration
- improved surface dryness on extrusion
- excellent stand-up properties
- texture and mouthfeel as desired
- excellent meltdown properties
- excellent heat shock resistance

**Low-calorie ice cream**
Within this segment both low-fat and low-sugar products are found. By using the right blends of emulsifiers and stabilizers, these products can be almost as creamy and full-bodied as a traditional ice cream.

**In low-calorie ice cream, Palsgaard’s emulsifier/stabilizer systems improve the**
- body and texture
- mouthfeel
- meltdown properties
- heat shock and storage stability

**Extruded ice cream**

The use of extrusion technology to produce novelties such as “funny face” ice cream, cones with decorated tops or multi-layered desserts requires emulsifier/stabilizer systems designed to improve the stand-up and meltdown properties of the ice cream.
Textures from refreshing, short and crystalline to creamy and smooth can be obtained.

By choosing the right blend of Palsgaard’s emulsifiers and stabilizers, the texture and mouthfeel can be modified according to the consumer’s requirements.

The emulsifiers/stabilizers determine the
- mouthfeel
- texture and body
- meltdown properties

Palsgaard’s stabilizers ensure the
- formation of small ice crystals
- controlled flavour/colour release
- high stability even at a very low pH
- control of ice crystal growth

By applying extrusion technology, the “funny face” and multi-layer product types can be introduced into the range of water ice. Moreover, by incorporating air into the product, the water ice becomes smoother and creamier.

Palsgaard’s emulsifier and stabilizer blends improve the
- form stability
- meltdown properties
- mouthfeel
- texture and body

Sorbet and sherbet

Textures from refreshing, short and crystalline to creamy and smooth can be obtained.

By choosing the right blend of Palsgaard’s emulsifiers and stabilizers, the texture and mouthfeel can be modified according to the consumer’s requirements.

The emulsifiers/stabilizers determine the
- mouthfeel
- texture and body
- meltdown properties

Ice lollies

The main functions of the stabilizer are to control the formation of ice crystals and prevent flavour and colour from being sucked out during consumption.
The same equipment used with ice cream is also used in the production of mousse, although the composition of the emulsifier and stabilizer blends is completely different. As frozen mousse is thawed and served at temperatures of around 5°C, the main function of the blends is to maintain the foam structure at room temperature.

**Palsgaard’s emulsifier and stabilizer blends improve the**

- freeze/thaw stability
- shape retention of the mousse after thawing
- mouthfeel
- texture and body

Palsgaard PGPR is an emulsifier binding the water which migrates from the ice cream into the chocolate during enrobing, ensuring that the viscosity of the coating remains stable during the process.

**Palsgaard PGPR improves the**

- flow properties
- formation of even layers of coating on the ice cream
- adhesion of the coating to the ice cream
Palsgaard quality products

Palsgaard manufactures emulsifiers, stabilizers and other ingredients for the bakery, chocolate, confectionery, dairy, ice cream, fine foods and margarine industries.

Palsgaard has been developing and manufacturing emulsifiers and stabilizer systems for use in the dairy industry for more than 50 years. Our research and development company, Nexus, was founded in 1949 and has taken out numerous patents for Palsgaard products.

Palsgaard produces ingredients in Denmark, China, the Netherlands and Mexico. Palsgaard production facilities are modern and cost-effective, and the basis of our quality products is the use of only the finest raw materials. To assure you a premium and safe product, we manufacture according to HACCP principles. Among our quality assurance documentation is ISO 9001 certification as well as GMP. Most Palsgaard products are furthermore manufactured according to halal and kosher regulations.

Palsgaard offers both pure emulsifiers and ready-to-use mixes for specific applications. The blends are processed either as pure dry blends or fully integrated compounds. For specific applications, blends can be tailored as required.