

EMSLAND GROUP[®]
using nature to create

Potato Products





Potato Products

The demand for convenience foods such as potato products – either whole or dehydrated in the form of flakes or granules – is increasing globally.

Choosing the right ingredients can help to optimize the texture and stabilization properties, as well as the shelf life of the final products.

Emsland Group Ingredients

The Emsland Group provides flakes and starches for various types of potato products, such as potato croquettes, formed potato specialties, gnocchi, potato dumplings, mashed potatoes and puree.

Specialty starches can assist in the texturizing and binding of potato products, or aid the production process.



Potato Flakes

The flake portfolio of the Emsland Group consists of products differing in preparation method, e.g. low leach (LL) or fully processed (FP), granule size, sugar content, additives and colour.

The Emsland Group has also developed clean label flakes for potato products. **Empure® KF 1100** is a coarse product, while **Empure® KF 1500** is finer.

Potatoes and Purees

Texture & Consistency

Customer requirements for mashed potatoes and purees can be very different, depending on the desired texture or consistency, for example pulpy or smooth.

The wide-ranging **Emflake®** potato ingredient portfolio and the expertise of the Emsland Group help customers to find the right potato flake to fulfill the requirements of mashed potatoes and purees.



Products for Mashed Potatoes and Purees

	Emflake 3824	Emflake 3806
Type	Potato flake	Potato flake
Description	Coarse potato flake for mashed potatoes and purees with a pulpy texture	Potato flake with a finer particle size that will give smoother mashed potatoes and purees with increased consistency

All products are registered®



Formed Potato Specialties

Fast Set & Form Stability

Formed potato specialties, such as rösti or potato pancakes, are made from potato puree. The forming can be challenging, as the potato puree should have a fast and firm set before the products can be baked and frozen. The variety of size and shape that is produced nowadays demand a good form stability.

The Emsland Group has developed **Emflake® 3913** potato flake and **Emjel® EP 200** and clean label **Empure® KJEL 200** starches that support and facilitate the forming process and give a good set and texture of the formed potato specialty.

Products for Formed Potato Specialties

	Emflake 3913	Emjel EP 200	Empure KJEL 200
Type	Potato flake	Pre-gelatinized modified potato starch (E1414)	Pre-gelatinized clean label potato starch
Description	Potato flake that allows high production speed as it has a fast and firm set and excellent shape retention	Modified potato starch that has excellent cold binding properties and supports form stability	Clean label starch for binding and forming

All products are registered®



Potato Croquettes

Form Stability & Leak Prevention

Similar to formed potato specialties, the forming of potato croquettes can also be challenging, as the potato puree should set first before the products are battered, breaded and pre-fried. Additionally, the ingredients for the puree should prevent leakage or bursting during frying.

Potato flakes are important ingredients for potato croquettes. For this application, the Emsland Group offers **Emflake® 3815** and **Empure® EJEL 100**, a clean label specialty pea starch. Due to the inherent gelling properties of pea starch, a fast set that remains stable during frying is achieved, while leakage or bursting of the croquette is prevented.

Products for Potato Croquettes

	Emflake 3815	Empure EJEL 100
Type	Potato flake	Pre-gelatinized clean label pea starch
Description	Coarse flake for potato croquettes	Product that improves the binding and gelling properties of the croquette puree leading to a fast set. During frying, the gelling starch will prevent leakage or bursting

All products are registered®

Potato Dumplings and Gnocchi

Texture & Bite

German potato dumplings or 'Knödel' are large dumplings that can be prepared by using a blend of potato flakes, starches, flour and binding agents. The second variety of German dumplings contains breadcrumbs with additional spices and ingredients and has the German name 'Semmelknödel'. Gnocchi is a typical small Italian potato dumpling.

Dumplings are prepared by adding them to boiling water and then simmering in the water until done. The ready-made product should have a short and

non-sticky texture and should not lose starch during cooking. After cooking, the product should have a firm texture with a good bite.

The combination of **Emflake**® potato flakes and **Emjel**® instant modified potato starches provides the ideal potato-based solution for potato dumplings. For gnocchi, ingredients with a smaller particle size are preferred, as gnocchi dough should be more homogeneous compared to a dough for German potato dumplings.

Products for Potato Dumplings and Gnocchi

	Emflake 3960	Emflake 3810	Emjel P	Emjel P 1373
Type	Potato flake	Potato flake	Pre-gelatinized modified potato starch (E1412)	Pre-gelatinized modified potato starch (E1412)
Description	Fine potato flake that is very suitable for gnocchi	More coarse potato flake that is suitable for potato dumplings	Modified cold-water binding potato starch that regulates stickiness of the dough – advised for gnocchi	A coarser version of Emjel P and more suitable for potato dumplings

All products are registered®

About the Emsland Group

Using nature to create is the guiding principle of the Emsland Group. As a global leader in refined products made from potatoes and peas, we offer a wide range of innovative products with the high quality and reliability that the Emsland Group name is known for.

Our plant-based ingredients include native, clean label and modified potato and pea starches, proteins and fibers, as well as potato flakes and granules, which can be used as thickeners, binding agents, emulsifiers and stabilizing additives for various applications. We serve a variety of industries and offer solutions for trends such as clean label, kosher, halal, gluten-free, vegan, fiber enriched, sustainability, as well as non-GMO raw materials.

Innovation is a core driving force at the Emsland Group. Experts at our Innovation Centre in Germany are constantly developing and optimising products and concepts to meet the evolving demands of both the industry as well as the end user. We work closely with customers to further develop our product portfolio and overcome challenges in a sustainable way.

Sustainability is a responsibility that, for us, does not begin in the factory, but in the field. Since 1928, we have been relying on the innovative power of nature and working in harmony with our natural resources in all our endeavours. Our team is dedicated to continuously working to develop products that are in line with newer sustainability benchmarks, helping to drive the global trend towards more environmentally friendly and sustainable options through the production of plant-based solutions.

The Emsland Group offers product solutions for the following food segments:

- Bakery
- Confectionary
- Dairy & Alternatives
- Food Coating
- Meat Analogues
- Meat, Poultry & Seafood
- Noodles & Gluten-Free Pasta
- Potato Products
- Potato Snacks
- Retail & Food Service
- Soups & Sauces

The table below offers an overview of the most common applications of our products in all food segments. For more complete information on the Emsland Group's products and applications, please contact us at info@emsland-group.de.

Ingredients	Functionality	Food applications
Potato flakes <i>Emflake</i>	Texturizing, expansion, forming	Snacks, potato products, bakery
Potato granules <i>Emgranule</i>	Texturizing, expansion, forming	Snacks
Native pea and potato starch	Thickening, texturizing, water binding, expansion, anti-caking	Soups, sauces, noodles, meat, snacks, gluten-free products
Modified pea and potato starches <i>Emes, Emflo, Emden, Emox</i>	Thickening, texturizing, gelling, binding, expansion, forming	Snacks, soups, sauces, confectionary, food coating, baked goods, processed cheese and alternatives, meat and analogues, noodles
Cold water swelling or soluble native and modified starches <i>Emjel, Emfix, Emspray</i>	Instant thickening, texturizing, binding, emulsifying	Snacks, soups, sauces, bakery fillings, baked goods, cheese and alternatives
Potato and pea dextrins <i>Emdex</i>	Film forming, texturizing (crispiness)	Food coating, filler, binder
Clean label pea and potato starches <i>Empure</i>	Thickening, gelling, texturizing, binding	Soups, sauces, potato products, meat analogues
Waxy potato starch <i>Emwaxy</i>	Expansion, thickening, texturizing	Snacks, meat, noodles, cheese alternatives, fruit preparations, bakery fillings
Pea protein isolate <i>Empro</i>	Nutrition (protein enrichment), texturizing, emulsification	Meat analogues, dairy alternatives, bakery, snacks
Pea and potato fiber <i>Emfibre</i>	Nutrition (dietary fiber, water and fat binding)	Meat and analogues, bakery, snacks
Blends <i>Embat</i>	Film forming, texturizing	French fry coating, tempura & adhesion batter

All products are registered®

The Emsland Group is committed to producing consistently high-quality ingredients. Customer health and safety, as well as transparency regarding our manufacturing methods, are top priorities.

To view a complete list of our certifications and qualifications, scan the QR code or visit www.Emsland-Group.com





EMSLAND GROUP[®]

using nature to create

Contact Us

Emsland-Group.com

+49 5943810

info@emsland-group.de

Emslandstrasse 58

49824 Emlichheim Germany

Disclaimer: All information and data in this brochure are in accordance with the best practise experiences and laboratory examinations of Emsland-Stärke GmbH and Emsland Food GmbH hereafter called Emsland Group. The indications are based on the current state of development, technology and research and should be taken as information on the products of Emsland Group, but must not be understood as promise of characteristics.

Emsland Group cannot assume liability for the product information and products, as the conditions under which the stocking, treatment and processing occur are out of the control of Emsland Group.

Liability claims against Emsland Group which refer to material or immaterial damages caused by the use or disuse of the offered products and product information of Emsland Group are basically exempted, unless demonstrably intended or grossly negligent fault exists which directly caused the damage. In particular Emsland Group assumes no liability that the offered products or product information are economically utilizable, technically executable or useful or that the offered products and product information do not infringe the rights of third persons.