SOJAPROTEIN

Company Catalogue

SOJAPROTEIN

High quality Non GMO
Soy Proteins from Serbia

VICTORIAGROUP

SOJAPROTEIN · VICTORIAOIL · FERTIL · VICTORIALOGISTIC · SPLABORATORIJA

RIBOTEKS · VICTORIASTARCH · VICTORIAPHOSPHATE · LUKA BAČKA PALANKA · VETERINARSKI ZAVOD SUBOTICA

SOJAPROTEIN

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Bečej, 2017.

Sojaprotein

Location

Sojaprotein meets all requirements needed for the production of quality soy proteins. The factory is located in the Province of Vojvodina, at the north region of the Republic of Serbia, in the Pannonia Valley. This is the most significant agricultural region in Southeastern Europe, a healthy environment without mayor industrial pollution and an ideal carbon footprint. Top quality and fertile land enables the production of all basic crop cultures: wheat, corn, soy, sunflower, sugar beets, etc. Crop rotation order is strictly maintained on planted areas, avoiding monoculture and spreading of specific plant diseases.

As Sojaprotein is located in the heart of Serbia's soy bean growing area, domestic locally grown soybeans is used for production. As a member of Danube soya organisation sustainability of soybens is underlined.

OUR GUIDELINES:

IDENTITY PRESERVED NON GMO
USING ONLY DOMESTIC ORIGIN SOY
PROCESSING LOCALLY GROWN SOY
MAINTAINING SUSTAINABILITY
RETAINING HEALTHY ENVIRONMENT
KEEPING LOW CARBON FOOTPRINT
OBTAINING FULL CERTIFICATION

With 180,000-190,000 hectares planted with soybean annually and averageing the yield of 2.5 t/ha, production is reaching 480,000 tons per year. For the purpose of providing the necessary quantities of domestic soy, continuous yield raise per unit of the product is achieved by better agricultural techniques and the introduction of more fertile varieties, which is the continuous task of domestic field crops institutes.

Soybean

Sojaprotein exclusively use domestic origin soy beans, strains created through selection at domestic crop institutes. In Serbia it is legally forbidden to produce or trade soy beans which are genetically modified. The genetic purity of soybeans is insured through all phases, from planting and growing of soybeans to the production and delivery of products. All phases are documented and supported through certificates issued by renowned laboratories which makes the identity preservation requirement completely transparent.

The company has encouraged and supported the production of soybean in Serbia since its establishment in 1977. and with its regular production from 1983. Today, it meets its needs for raw material with beans of domestic origin.

Since 2009, the provision of raw material for Sojaprotein has been operated by Victoria Logistic company, which is, like Sojaprotein, a member of the Victoria Group. With significant investments into primary agricultural production, along with the work of experts, Victoria Logistic has managed to organise the production of mercantile soybean with its contract farmers. Owing to systematic cooperation with soybean producers, a partnership relation with them and advance investments into seeding, the production of soya needed for Sojaprotein`s plant capacity has reached the optimum quantities.

The Victoria Group

Since 2002, Sojapotein has operated within the domestic company Victoria Group, becoming a part of a complete production system that unites 10 companies across Serbia.

One of the largest agribusiness conglomerates in Serbia, Victoria Group's unrelenting strive for quality and innovation has secured it's position as a leader in the agribusiness sector in Serbia and beyond.

SOJAPROTEIN
VETERINARSKI ZAVOD SUBOTICA
VICTORIAOIL
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FERTIL
VICTORIASTARCH
VICTORIAPHOSPHATE
RIBOTEKS

NON GMO

Non-Genetically Modified Soya

The Law on Genetically Modified Organisms of the Republic of Serbia prohibits the use, commerce and production of genetically modified organisms or products that contain genetically modified organisms, except for scientific research or with a special permit and control by the Ministry.

In line with the permanent development of a quality system and the adoption of international standards, Sojaprotein has developed an Identity Preservation Programme certified by Switzerland's SGS, the world largest inspection, testing, certification and verification company. This programme defines a process for preserving genetic purity from seed production to the delivery of the final product, while strictly observing the control procedure for any segment in the production chain, with clearly defined traceability and system documentation. The traceability of the soybean identity and soybean products includes the following phases:

- using soybean varieties that have been developed using the classical selection methods in domestic institutes for field and vegetable crops
- special attention given to the selection of sub-contracted farmers for soybean production
  - control of the genetic modification of soybean seed at the seed producers
  - control of the genetic modification at the cooperators (farmers)
- control of the genetic modification of soybean in the fields during the vegetation period
- control during harvest and storage (of the agricultural machinery, transport and storage)
- control of all soybean quantities taken received in Sojaprotein
- control of intermediate and final products

The application of this programme guarantees that Sojaprotein's products produced from Identity Preserved Non GMO soybean have a genetically modified content less than 0.9 percent. Genetic modification control is performed in accredited laboratories.

International Standards

Application in Production and Quality Processes

Sojaprotein has established a Quality Management System in line with the requirements of all major product safety and environmental management standards. The products of Sojaprotein also meet the Kosher and Halal requirements.

By engaging accrediting laboratories that control the conditions during raw material production, raw material buy-out, input material control, production process control, analysis of the final products, Sojaprotein provides high-quality and safety for customers.

IP NON GMO
Valid-IT
ISO 9001
ISO 14001
OHSAS 18001
ISO 22000
HACCP
FSSS 22000 Food
FSSC 22000 Feed
GMP+B2
CSQA ISO22005-DTP030
CSQA DTP112
Kosher
Halal
HALAL HFCE
Danube Soya
Letter of conformity - Nestlé

Product Quality

Sojaprotein produces healthy and safe products from non-genetically modified soybean. The equipment and the technological process properties enable high and stable product quality. The soybean quality, the quality of other input materials auxiliaries and packages, intermediate and final products have been controlled by both the international certification company SGS and the domestic laboratory company SP Laboratorija, which is accredited in accordance with JUS ISO 17025. HACCP (Hazard Analysis and Critical Control Point), which is harmonised with the Codex Alimentarius, has also been established and implemented.

The production, storage and transport conditions enable the protection of products from contamination and are in compliance with the Manufacturing Practice in Manufacturing, Packing or Holding Human Food quality system norms and the FDA regulations. These standards are implemented in all phases of the technological process. In this way, inadequate procedures that can cause or contribute to risks and the deterioration of the final product are prevented.

Special attention is paid to training of the staff, in order to keep abreast with the all relevant practices and requirements in food and feed industry.

Production

At the Cutting Edge of Technology

Sojaprotein boasts modern technological equipment produced by the best known European and U.S. manufacturers. Special attention has been given to the maintenance of the technical and technological readiness of the plant through the permanent application of knowledge regarding innovation in this field of the food-processing industry. Equipment has been built in, enabling Sojaprotein to keep pace with the leading soybean processors around the world.

The company is dedicated to the maximum utilisation of the production capacity by increasing productivity, eliminating bottlenecks in the production process via the installation of new devices and the modern packing of final products..

In this way, owing to the installation of new equipment, the annual capacity of the plant has increased from 160,000 tonnes to 250,000 tonnes of processed beans. Investment in new equipment for human food production has been especially high in the past few years.

Warehouse with 14,000 pallets places provides requested conditions for the receiption, storage and delivery of finished products. Sojaprotein has ambitious plans for the expansion and modernisation of its facilities in the years to follow.

The annual processing capacity equals to 250,000 tons of soybean.

Soy Protein Concentrates Plant

With growing demand for soy products, both in food industry and for animal feed, soy protein concentrates represent an important part within the production program of Sojaprotein Becej plant.

A plant for the production of traditional soy protein concentrates with an annual capacity of 70,000 t was completed in Sojaprotein in 2012.

With additional phase of water-ethanol extraction and removing soluble sugars from material, protein content in soy protein concentrates is increasing up to 65% -70%. Sojaprotein is providing wide range of traditional soy protein concentrates for food and feed aplications. These products have a low level of anti-nutritive and antigen factors, as well as an optimal amino acidic profile and excellent digestibility.

Sojaprotein has become the sole producer in Europe that bases its production on soybean that is produced domestically.

Processing soya types developed by natural selection enables Sojaprotein to manufacture Non-GMO products using non-genetically modified soybean.

Packing and Storage

Packing Products

Protein Products

- paper bags; for flours with inner HDPE or LDPE layers.
- stretch-foil wrapped pallets declaration on an individual bag and pallet
- bag weighting from 8 kg to 30 kg, depending on the product type
- bag bags made from polypropylene
- big bag weighting from 600 kg to 1000 kg, depending on the product type

Oil Products

- soybean oil is tanked in road tanker
- soybean lecithin is delivered in road tanker, metal and plastic drums of 60 kg and 200 kg

Product Storage

Sojaprotein has a state-of-the-art storage area where final products are kept in controlled conditions pending delivery.

Sales

Domestic and Foreign Markets

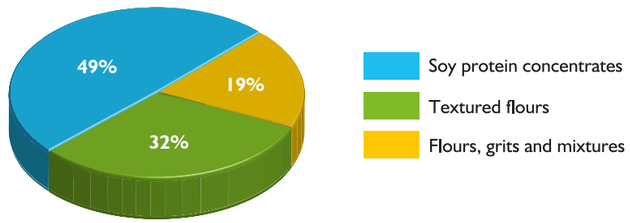
Most soybean products have been sold on the domestic market where Sojaprotein is recognised as a long-time supplier of ingredients for the production of high-quality animal feed and a reliable supplier for various food processing industrial branches in Serbia. Lately, the sale of soybean products on foreign markets has become a long-term orientation of Sojaprotein and is constantly increasing.

Owing to the soybean products being produced from Non GMO varieties of domestically originated soybean, Sojaprotein has a comparative advantage on foreign markets and interest in these products has been increasing until Sojaprotein's products are available in 60 countries worldwide.

Value-added Products

As a result of the permanent orientation to winning over new markets and owing to continuing investment in the most sophisticated equipment, the share of higher-phase processing products in overall exports has been continually increasing in the past year with a further growing trend expected. The higher phase processing products are soy protein concentrates, textured soybean flour, soybean flour product group and soybean lecithin.

Value-added Products (t) 2017.



Sales Expansion

Sales Trend

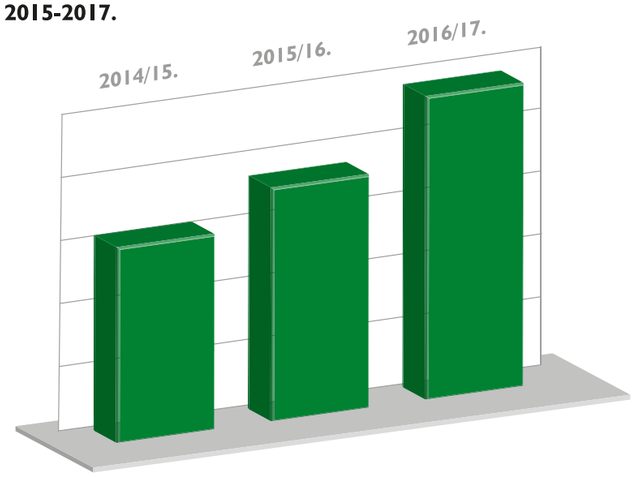
Since the plant started its operations, export has played a significant role in the company's development, undergoing various phases just like the company itself. During the 1980s, export was a function of cooperation and service-based soybean processing, thus providing the hitherto insufficient quantities of the domestic soybean for processing. Subsequently, in the 1990s, export based on sales, primarily of higher-phase processed Non GMO soybean, was developed, at first modestly but more intensively over time.

The period after 2000 was characterized by maintaining the growing trend of soybean product export for various purposes, with a concurrent spreading in the European markets. The completion of the privatization process by the end of 2002 brought about a change in Sojaprotein's philosophy and export orientation. The foundations of the export expansion of Sojaprotein that ensued in the following years and have lasted until today were laid at that time.

Sales Structure

The export expansion has been particularly influenced by the fact that the plant only processes Non GMO soybean. Owing to the production of Non GMO soybean in Serbia, under the authority of Sojaprotein and Victoria Logistics, the conditions were met for issuing a valid certificate of origin, traceability and genetic purity preservation (IP Non GMO), wherewith all the requirements valid in the European Union and other countries that do not accept GMO products have been met.

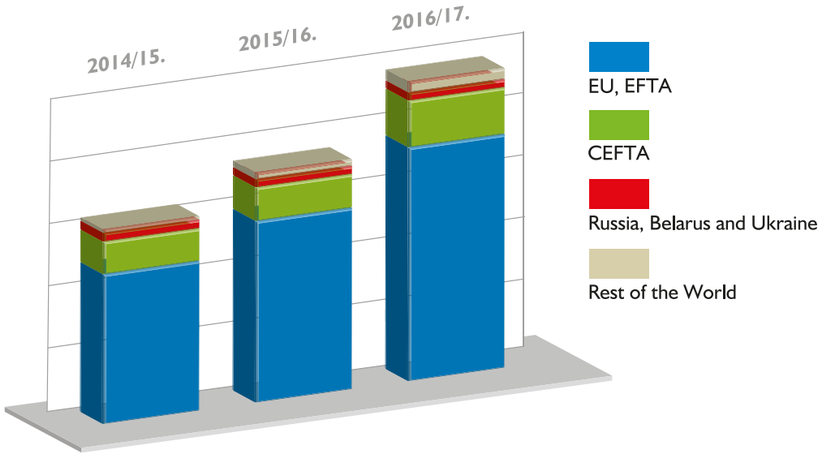
Sales (t) 2015-2017.



Regional Export Structure

The regional export structure varies depending on the product mix in certain years. The European Union market is the most important market for Sojaprotein's products, accounting 80 percent of the total export. This is followed by the CEFTA countries, Russian Federation and other countries around the World. Among buyers, trade companies that further distribute the products and end users, in various branches of the food processing industry and animal feed production, are equally represented. In total, products are sold in more than 60 countries worldwide.

Regional Structure (t) 2015-2017.

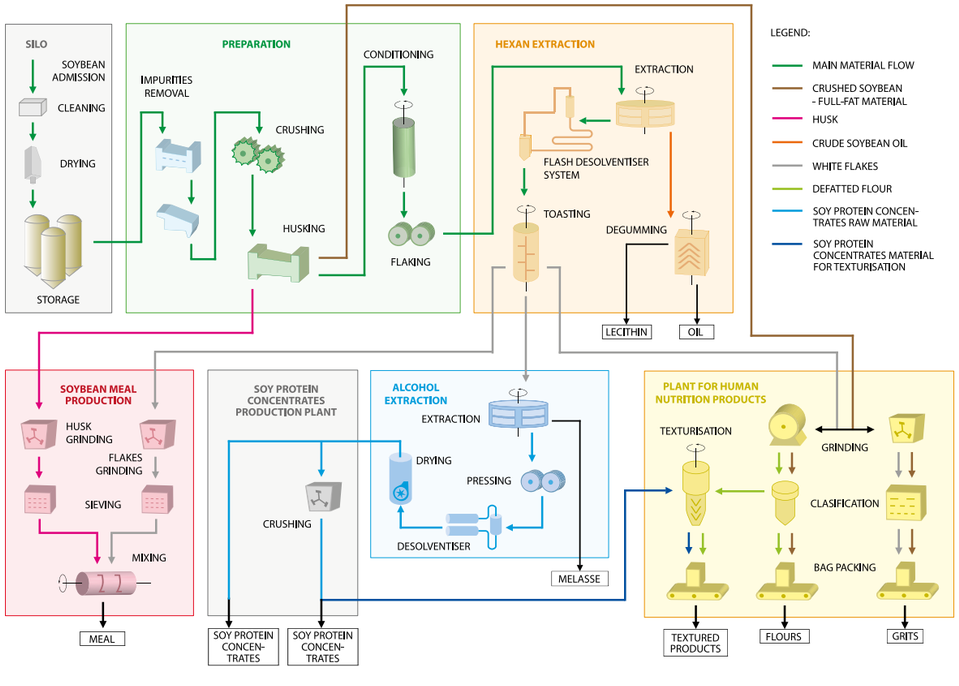


Processing and product lines

A soybean processing method that was adopted during the design of the Sojaprotein plant has been applied and has not been fundamentally altered since then, though it has been streamlined and improved in some areas over the years.

Soybeans are driven up from the field and initially pass through admission control (proteins and oil contents, moisture, dirt and genetic modification control). The beans received are first classified according to their moisture contents. Then coarse dirt is removed from the beans, they are dried to the optimum moisture content and stored in silo cells for a longer period of time. At the beginning of the processing phase, the beans are subjected to another phase of coarse and fine cleaning. In order to facilitate de-hulling, beans are dried again and conveyed to the preparation plant. The beans are than crushed, the husk is separated and the beans are conditioned (steam-heated) and passed through large rollers that give them a flake-like form. In the preparation plant, raw material is separated into the parts going into the production of full-fat products and those going into extraction. There, oil is extracted and the defatted material is processed hydrothermally in order to remove the residual hexane solvent and deactivate anti-nutritional ingredients (desolvation and toasting). Also, lecithin is separated from the raw oil in a degumming process. From the extraction plant, the degummed soybean oil and lecithin are stored in tanks and subsequently sold in their raw state.

Depending on the quality of the selected soybean and the technological parameters applied, defatted flakes are sent for the production of flours and grits for human consumption, or for the production of soya meal for animal feed. Defatted flakes are also used for production of textured products (minced, chunks and slices). Products for food and feed application are packed in adequate packaging (small bags, big bags) or sold as bulk material.



Product lines

Soybean products have a lot of different applications. The main products obtained by milling and sieving are flours and grits, which can have, beside different particle size, also various fat and protein content. The protein content in these products are in range from 41,0 to 53,0 %, while the oil content varies from 1.2 to 23.0 %. Depending on those characteristics, the products are used in many branches of the food-processing industry.

The main advantages of the use of soya products in the food-processing industry are as follows:

- **increasing the overall nutritional and biological values and the usability of the final products**
- **improving the sensory properties of the final products**
- **provides cost effective alternative for improved profitability**

Defatted lightly toasted white flakes that are obtained from processed soybeans, are the starting raw material for the production of textured proteins. Sojaprotein produces textured products of various granulation and colours (minced, flakes, chunks, slices). These products are similar to meat in texture and form, and they are mostly used in the meat processing industry and as meat analogues.

First intended use of soybean products as substitute for more expensive ingredients has been changed by the years. Further development of soy-processing technology has given soybean products a greater role owing to their functional properties (water and fat binding) and their nutritive significance (increased protein content).

Crude degummed soybean oil has many uses in the food-processing industry, pharmaceutical industry and wide variety of technical applications. In the food-processing industry, soybean oil is mainly used for the production of solid fats and margarine.

As soybean lecithin contains 65% phospholipids, it has wide use in industy for its emulgating properties. Soya lecithin as a natural antioxidant and natural source of potassium and calcium has a beneficial effect on the body so it is used in the production of dietary supplements.

Soybean meal, which contains nearly 44 percent protein and is used for animal feed (especially for pigs, cattle and poultry), is obtained from defatted white flakes with the addition of soya husks.

A higher soybean processing phase is the production of traditional soy protein concentrates containing nearly 70 percent protein. Having opted for this production, the share of the soybean meal production in Sojaprotein is gradually reduced in favour of the use of raw material in the production of concentrates intended for the production of high-quality animal feed (calves, pigs, poultry and fish).

The main reason for such growing demand of soy products within animal feed is the commercial decision to replace certain components in the animal feed diet, such as fish meal, meat and bone meal and dairy proteins, with nutritional soy products. The consideration to utilize soy proteins to replace these raw materials is influenced by the fact that the final products such as veal or salmon are offered for human consumption and that the amino acid spectrum of Sojaprotein concentrates practically matches nutritionally those of animal origin proteins.

Apart from safety reasons it is the nutritional qualifications of Sojaprotein proteins that can successfully replace proteins of animal origin, both in human food applications and young animal diets.

Food Products

Among the group of legumes that play significant role in proper nutrition, soya has a special place owing to its nutritional properties. What separates soya from other plants in the legume family is its high protein content. The nutritional value of soybean products lies in its content of high-value proteins, which is similar to those that can be found in products of animal origin, due to it's high content of essential amino acids. These are ingredients that the human body itself cannot produce so they have to be taken in through food, and they are necessary for the functioning of the human organism.

Soybeans have to be properly processed into products intended for consumption. Anti-nutritive substances are removed from the beans using an appropriate technological process. This is achieved by the controlled thermal treatment of the beans, while ensuring the preservation of other nutritional and beneficial substances such as proteins, minerals and vitamins.

The modern technology applied in Sojaprotein for soybean processing enables to produce a wide range of soybean tailored for a great variety of applications with a wide application in the food processing industry where their functional properties are used to increase the nutritional value of the final products. Our Soja Vita range of retail format has been successfully developed and introduced as a meat analogue solution for the growing demand of this category. Supplementing meals with soy protein products increases the variety of food, which is a prerequisite for healthy nutrition.

Based on the technological process used, Sojaprotein products are divided into the following categories:

- Flour and grits
- Textured soybean flour products
- Soy protein concentrate
- Textured soy protein concentrate
- Functional mixtures
- Oil products

Sojaprotein products for human consumption are intended for:

- Industrial meat processing
- Confectionery industry
- Baking industry
- Pasta industry
- Vegeterian / Vegan products
- Dietetics and pharmaceuticals
- Vegetable oil and fat production
- Use in individual diets and in the catering industry

PRODUCT NAME	MEAT INDUSTRY	BAKING INDUSTRY	CONFECTIONERY INDUSTRY	PASTA INDUSTRY	DIETETICS AND PHARMACEUTICALS	VEGETABLE OIL AND FAT PRODUCTION	CATERING INDUSTRY	VEGAN, VEGETARIAN MEAT ANALOG	PAGE
	PRODUCT USE								
SOPRO-PTB		●	●						16
SOPRO-MTB			●						18
SOPRO-UTB		●	●	●					20
SOPRO-TB	●		●	●	●		●		22
SOPRO-TG	●		●						24
SOPROTEX-N, H Minced, Flakes, Chunks	●	●	●				●	●	26
SOPROTEX-N Slices							●	●	30
TRADCON F TRADKON SPC HC	●	●	●	●	●		●		32
TRADCON T	●	●					●	●	34
SOPROMIX-1 SOPROMIX-HE	●								36
CRUDE DEGUMMED SOYBEAN OIL						●			40
CRUDE SOYBEAN LECITHINE		●	●		●	●			42

FLOUR AND GRITS
TEXTURED SOYBEAN FLOUR PRODUCTS
TEXTURED SOY PROTEIN CONCENTRATE
SOY PROTEIN CONCENTRATE
OIL AND OIL RAFINATED PRODUCTS

Protein Products

SOPRO-PTB

Full-Fat Toasted Soybean Flour

BASIC PROPERTIES

SOPRO-PTB is a product obtained by processing soybean with high protein content. The natural ratio of the proteins and the high level of soybean oil, lecithin, minerals and fat-soluble vitamins remain intact in this product. The anti-nutritive factors are deactivated using appropriate thermal processing, and the usability of the proteins is thus increased. SOPRO-PTB is valuable for its high nutritional and biological values and its functional properties in the final production process. SOPRO-PTB has emulgation properties, it stabilises emulsions of oil/water and water/oil, absorbs and preserves water and prevents fat from going rancid owing to its naturally high tocopherol contents.

Chemical characteristics

Composition	Typical values %	Guaranteed values %	
Protein* (N x 625)	41,0	min. 39,0	(1)
Water	7,0	max. 8,0	(1)
Fat*	23,0	min. 20,0	(1)
Urease activity ΔpH	0,1	max. 0,3	(1)
PDI (Protein Dispersibility Index)	-	10-35	(1)

**Moisture free basis*

Other characteristics

Colour	yellow to tan	
Flavour	pleasant, resembling nuts	
Odour	neutral	
Energy value	1.795 kJ (429 kcal)/100 g	(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality.

SOPRO-PTB is produced from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
SOPRO-PTB	BFL120000018	min. 90%<0,150 mm (#100 mesh US St. Sieve)	25 kg	30	750 kg

Packing and Storage

Packing: SOPRO-PTB is packed and delivered in paper bags with a low-density poly-ethylene (LDPE) insert, net weight 25 kg. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a pallet, wrapped in stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 12 months.

PRODUCT APPLICATION

Baking Industry

Adding SOPRO-PTB to wheat flour increases its nutritional value, gives the bread a nicer crust colour, reduces crumbling and prolongs the freshness of bread and pastry; since it is dosed at 15-20 percent relative to the wheat flour, the quantity of water should be increased proportionally. In order to achieve a better structure of the bread and pastry interior, the use of gluten flour is recommended.

SOPRO-PTB is used as a component in the production of high-protein bread, bread for people suffering from diabetes, etc.

Confectionery Industry

SOPRO-PTB is used as a nutritional supplement in amounts of up to 10 percent, for the purpose of increasing the protein content, which is of special importance because these products are primarily intended for persons at a young age. For the production of biscuits, 2 percent is added to the wheat flour, thus facilitating the mechanical processing of the dough. SOPRO-PTB improves the structure of confectionery products and prolongs their freshness and shelf life. In the production process, it reduces the consumption of eggs and fats, improves fat consistency, prevents fat from separating and postpones the recrystallisation of sugar.

SOPRO-MTB

Semi-Fat Toasted Soybean Flour

BASIC PROPERTIES

SOPRO-MTB is a product obtained by processing soybean with high protein content. This product is typical for its medium oil and protein content, which is conditional to its purpose. The anti-nutritive factors are deactivated using appropriate thermal processing, and the usability of the proteins is thus increased. SOPRO-MTB is valuable for its high nutritional and biological values and its functional properties in the final production process. SOPRO-MTB has emulgation properties, it stabilises emulsions of oil/water and water/oil, absorbs and preserves water and prevents fat from becoming rancid owing to its naturally high tocopherol contents.

Chemical characteristics

Composition	Typical values %	Guaranteed values %	
Protein* (N x 625)	48,0	min. 47,0	(1)
Water	6,0	max. 8,0	(1)
Fat*	8,5	max. 9,0	(1)
Urease activity ΔpH	0,1	max. 0,3	(1)
PDI (Protein Dispersibility Index)	-	10-35	(1)

**Moisture free basis*

Other characteristics

Colour	yellow to tan	
Flavour	pleasant, overly sweet	
Odour	neutral	
Energy value	1.525 kJ (364 kcal)/100 g	(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality.

SOPRO-MTB is produced from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
SOPRO-MTB	BFL210000001	min. 90%<0,150 mm (#100 mesh US St. Sieve)	25 kg	30	750 kg

Packing and Storage

Packing: SOPRO-MTB is packed and delivered in paper bags with a low-density polyethylene (LDPE) insert, net weight 25 kg. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a pallet, wrapped in stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 12 months.

PRODUCT APPLICATION

Confectionery Industry

SOPRO-MTB is used as an additive for improving the nutritional value and quality of confectionery products with a quantity of 10 percent relative to the wheat flour. The addition of SOPRO-MTB improves mechanical dough processing, reduces the consumption of eggs and fat, improves the economy of production, enhances fat and sugar distribution and fat consistency, prevents the separation of fat and loss of water, and postpones the recrystallisation of sugar.

SOPRO-UTB

Defatted Lightly Toasted Soybean Flour

Product title	Product code	Granulation	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
SOPRO-UTB 100	BFL410000020	min. 90%<0,150 mm (#100 mesh US St. Sieve)	25 kg	30	750 kg

BASIC PROPERTIES

SOPRO-UTB is a product obtained by processing soybean with high protein content. SOPRO-UTB is a unique source of proteins with high dispersibility in water, and high content of essential amino acids as well as minerals and vitamins that are important for the overall metabolism.

SOPRO-UTB is valuable for its high nutritional and biological values and its functional properties (emulgation and stabilisation, a high affinity for water absorption and binding, dispersion, fat emuslification, easily forms protein netting, improvement of the structure and antioxidant action). Owing to the presence of the lipoxygenase enzyme, it is a good bleaching agent. In order to deactivate the anti-nutritive factors contained in soybean, subsequent thermal treatment of products supplemented with SOPRO-UTB is required.

Chemical characteristics

Composition	Typical values %	Guaranteed values %	
Protein* (N x 625)	50,0	min. 50,0	(1)
Water	7,0	max. 8,0	(1)
Fat*	1,2	max. 1,5	(1)
PDI (Protein Dispersibility Index)	38	>35	(1)

**Moisture free basis*

Other characteristics

Colour	yellow	
Flavour	specific	
Odour	specific	
Energy value	1.451 kJ (347 kcal)/100 g	(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality. SOPRO-UTB is produced from controlled, non-genetically modified soybean (GMO <0.9%).

Packing and Storage

Packing: SOPRO-UTB is packed and delivered in paper bags with a low-density polyethylene (LDPE) insert, net weight of 25 kg. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a pallet, wrapped in stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 24 months.

PRODUCT APPLICATION

Baking Industry

Owing to the partial presence of the lipoxygenase enzyme, it is a good bleaching agent of the bread interior. Because of its high content of high-value proteins, it is usually used for the preparation of special bread types where making the interior as white as possible is desired, and it does not influence the taste and scent even if dosed in higher percentages. Depending on the effects that are expected from the product and its purpose, it is dosed at 3-10 percent, calculated relative to the quantity of wheat flour, with the use of gluten flour as required. SOPRO-UTB serves as a very good correcting agent for reaching a prescribed protein level. It improves the rheological properties of the dough, the crust colour and the structure of the interior. The quantity of added water should be proportionally increased with the quantity of added SOPRO-UTB, which prolongs the freshness of the product.

Pasta Industry

SOPRO-UTB is recommended for the preparation of special pasta types (pasta with soybean, protein pasta, high-protein pasta and pasta for persons suffering from diabetes) with quantities of 12-30 percent relative to the quantity of wheat flour, which increases its nutritional value. The addition of SOPRO-UTB facilitates mechanical dough processing and reduces dough adhesiveness. Owing to the presence of the lipoxygenase enzyme, bleaching the dough is achieved.

SOPRO-TB

Defatted Toasted Soybean Flour

BASIC PROPERTIES

SOPRO-TB is a product obtained through the modern processing of selected soybean with a high protein content. It is an excellent source of proteins, or essential amino acids and protective substances – minerals and vitamins that are significant for the overall metabolism. The anti-nutritive factors are deactivated using appropriate thermal processing and the usability of the proteins is thus increased. SOPRO-TB has high nutritional and biological values and its functional properties (emulgation and stabilisation, a high affinity for water absorption and binding, dispersion, fat emuslification, easily forms protein network, improving the structure and antioxidant action) are useful in the final production process.

Chemical characteristics

Composition	Typical values %	Guaranteed values %	
Protein* (N x 625)	51,0	min. 50,0	(1)
Water	7,0	max. 8,0	(1)
Fat*	1,5	max. 2,0	(1)
PDI (Protein Dispersibility Index)	-	10-35	(1)

**Moisture free basis*

Other characteristics

Colour	yellow to tan	
Ukus	pleasant, overly sweet	
Odour	neutral	
Energy value	1.445 kJ (345 kcal)/100 g	(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality.

SOPRO-TB is produced from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
SOPRO-TB 200 A	BFL410000109	min. 90%<0,075 mm (#200 mesh US St. Sieve)	25 kg	30	750 kg

Packing and Storage

Packing: SOPRO-TB is packed and delivered in paper bags with a low-density polyethylene (LDPE) insert, net weight 25 kg, and in big bags. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a pallet, wrapped in stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 24 months

PRODUCT APPLICATION

Meat Industry

SOPRO-TB is used as a protein emulgation agent in the meat grinding process for the purpose of binding additional water, emulgation and overall stabilisation with meat-fat emulsions. It can be used dry or hydrated, in which case flour is added in the ratio one to three of water (1 : 3). SOPRO-TB can also be used as a functional additive because of its emulgation and gelling properties, as well as a filler or a substitute for albumins of animal origin. Its usual quantity in the final products is 2-4 percent.

Confectionery Industry

SOPRO-TB is used as a nutritional supplement in quantities of up to 5-7 percent, especially for increasing the protein content, which is of special importance because these products are primarily intended for persons at a young age. For the production of biscuits, 2 percent is added relative to the quantity of wheat flour, which facilitates mechanical dough processing. In confectionery products, SOPRO-TB improves their refinement and structure, improves product freshness and extends shelf life.

Catering Industry

For the catering industry, the addition of 10 percent soybean flour is recommended in order to enrich meals with proteins, essential amino acids, minerals and dietary fibre. This mixture is used for the preparation of the following dishes: raised dough products, pies, rolls and buns, donuts, pancakes etc.

Dietetics and Pharmaceuticals

SOPRO-TB is used in the production of various dietary products for additional nutrition for professional and recreational athletes, and in the production of various food products expected to produce dietary effects (dry mixture, bread, rolls and buns, confectionery products, pasta, etc.).

SOPRO-TG

Defatted Toasted Soybean Grits

BASIC PROPERTIES

SOPRO-TG is a defatted toasted soybean product with a high protein content. It is a source of proteins, or essential amino acids and protective substances - minerals and vitamins that are significant for the overall metabolism. Just like the other products from the toasted products line, the anti-nutritive factors are deactivated using appropriate thermal processing. The usability of the proteins is increased, high nutritional and biological values and its functional properties are useful in the final production process: emulgation and stabilisation, a high affinity for water absorption and binding, dispersion, fat emuslification. SOPRO-TG easily forms a protein network and improves the structure and antioxidant action.

Chemical characteristics

Composition	Typical values %	Guaranteed values %	
Protein* (N x 625)	50,0	min. 50,0	(1)
Water	8,0	max. 9,0	(1)
Fat*	1,5	max. 2,0	(1)

**Moisture free basis*

Other characteristics

Colour	yellow to tan	
Ukus	pleasant, sweet	
Odour	neutral	
Energy value	1.445 kJ (345 kcal)/100 g	(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality.

SOPRO-TG is produced from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
SOPRO-TG	BFL410000006	0,2 - 0,84 mm min. 90%	30 kg	30	900 kg
SOPRO-TG	BFL410000072	0,84 - 1,68 mm min. 90%	25 kg	30	750 kg

Packing and Storage

Packing: SOPRO-TG is packed and delivered in paper bags with a low-density polyethylene (LDPE) insert, net weight 25 kg or 30kg, and in big bags. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a pallet, wrapped in stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 24 months

PRODUCT APPLICATION

Meat Industry

SOPRO-TG is used as a nutritive and functional additive at levels up to 2%. The optimal stabilization is acheved in products that have the following structure ratios: protein:fat:water = 1:(1,5-3,5):(5-7).

Confectionery Industry

For a biscuit production SOPRO-TG is used as a nutritional supplement. SOPRO-TG improves biscuits refinement and structure, and at longer heating time it increases protein denaturation which is preferred for making both biscuits and crackers. It has a sweet “nutty” flavor and light tan color.

SOPROTEX-N and SOPROTEX-H

Textured Soy Proteins - Minced, Flakes and Chunks

BASIC PROPERTIES

SOPROTEX are textured products manufactured in an up-to-date procedure of extruding flour made of soybean with higher protein content. SOPROTEX are textured products in the form of chunks, minced and small minced. They are a source of proteins, i.e. essential amino acids as well as: minerals and vitamins which are significant for the entire metabolism. Anti-nutritive factors are deactivated using proper heat treatment, thus increasing protein utilization. SOPROTEX products have a high nutritional and biological value. The products are characterised by a structural integrity that remains intact during hydration, cooking, sterilisation and shearing. SOPROTEX has a high absorption capacity for water, fat and meat juices, enhances the stability of food systems, prevents fat separation and has antioxidant effects.

Chemical Characteristics

Composition	Typical values %	Guaranteed values %	
Protein* (N x 6.25)	50,0	min. 50,0	(1)
Water	7,0	max. 8,0	(1)
Fat*	1,0	max. 1,5	(1)

**Moisture free basis*

Other Characteristics

Flavour	pleasant, resembling nuts	
Odour	neutral	
Energy value	1.434 kJ (342 kcal)/100 g	(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality. SOPROTEX is a product manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

SOPROTEX products are produced in different granulations and shapes: Minced, Small minced, Flakes and Chunks. Products can have different colors used: natural (N), ham (H), beef (B) and corned beef (CB).

Product title	Product code	Granulation	Colour	Typical hydration (%)	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
SOPROTEX-N MINCED	BFL420000003	1,0 - 4,0 mm min. 85%	natural	350	15 kg	21	315 kg
SOPROTEX-H MINCED	BFL420000024	1,0 - 4,0 mm min. 85%	ham*	300	15 kg	21	315 kg
SOPROTEX-N SMALL MINCED	BFL420000084	0,075 - 1,0 mm min. 85%	natural	300	20 kg	21	420 kg
SOPROTEX-H SMALL MINCED	BFL420000085	0,075 - 1,0 mm min. 85%	ham*	300	20 kg	21	420 kg
SOPROTEX-N FLAKES	BFL420000011	1,0 - 6,0 mm min. 85%	natural	300	12 kg	21	252 kg
SOPROTEX-N CHUNKS	BFL420000046	5,0 - 20,0 mm min. 85%	natural	150	12 kg	21	252 kg
SOPROTEX-N CHUNKS	BFL420000050	10 - 25 mm min. 85%	natural	220	10 kg	21	210 kg

*Remark: * The colours used are permitted in the food industry.*

Packing and Storage

Packing: SOPROTEX is packed and delivered in paper bags (various net weights). Each individual package is labelled with product identification data on quality and quantity. The bags are placed on a pallet, wrapped in stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 24 months.

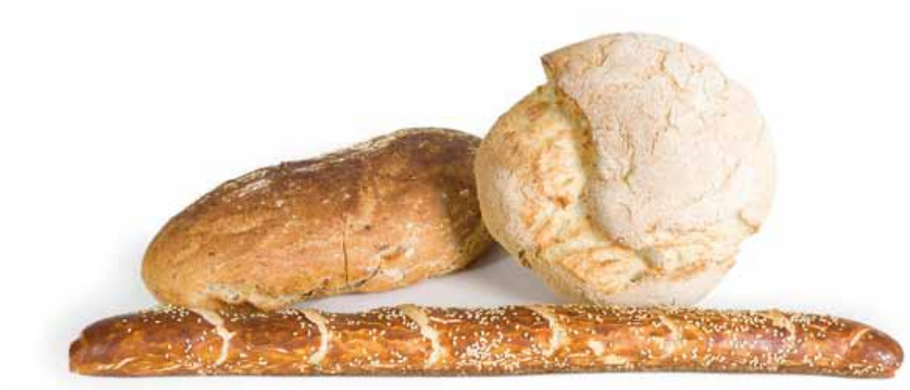
PRODUCT APPLICATION

Meat Industry

In the meat industry, minced and small minced forms are mainly used. The colour selection of the product depends on the type of meat used for the final product. They are predominantly used as extenders (partly replacing meat in the recipes), although they also show certain emulsifying properties when a 100-200 mesh granulation is used. These products are most effective in their hydrated state, with a recommended hydration of 1 : 2 to 1 : 3. They can be used in various types of sausages and in chopped and shaped meat products.

Baking Industry

SOPROTEX has a high water absorption capacity, enhances the stability of systems and has antioxidant effects. Its structural integrity ensures water retention during baking. It is useful in the production of bread and pastry. The recommended quantity of SOPROTEX in a dry form is 3-5% as calculated per quantity of wheat flour. After adding a quantity of SOPROTEX, an additional quantity of water in the ratio 1 : 3 must be added. Consequently, the output is increased and a positive economic effect is gained. The increased moisture content also extends the product's freshness. No change in colour is observed in bread slices. SOPROTEX is an excellent rectifier of protein contents in special types of bread.



Catering Industry

The application of soybean products in the catering industry has both a nutritional and economic function. The nutritional values and sensory properties of the dishes prepared in this way are significantly improved while their energy and cholesterol values are reduced. SOPROTEX products are used in the preparation of all types of hot and cold dishes made of minced and chopped meat and meat slices.

SOPROTEX-N

Textured Soy Protein - Slices

BASIC PROPERTIES

SOPROTEX-N SLICES are textured products manufactured in an up-to-date procedure of extruding flour made of soybean with higher protein content. They are a source of proteins, i.e. essential amino acids as well as minerals and vitamins that are significant for the entire metabolism. Anti-nutritive factors are deactivated using appropriate heat treatment, thus increasing protein utilization. SOPROTEX-N SLICES products have high nutritional and biological values. The products are characterised by a structural integrity that remains the same during hydration, cooking, sterilisation and shearing. The products have a specific shape resembling meat steaks or Schnitzels. Because of their exceptional nutritive and biological values, as well as its meat-like structure, they can be used to replace meat in the diet of those consumers who are especially attentive to healthy and economical nutrition.

Chemical characteristics

Composition	Typical values %	Guaranteed values %	
Protein* (N x 625)	50,0	min. 50,0	(1)
Water	9,0	max. 10,0	(1)
Fat*	1,0	max. 1,5	(1)

**Moisture free basis*

Other characteristics

Colour	dark yellow to light brown	
Flavour	pleasant	
Odour	neutral	
Energy value	1.434 kJ (342 kcal)/100 g	(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality. SOPROTEX is a product manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Colour	Typical hydration (%)	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
SOPROTEX-N SLICES	BFL420000071	40 - 80 mm min. 85%	natural	200	12 kg bag	18	216

Packing and Storage

Package: SOPROTEX-N SLICES are packed and delivered in paper bags and, if necessary, the bags are placed in cardboard boxes. Packing boxes on pallets is also available. Each individual package is labelled with product identification data on quality and quantity.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 24 months.

PRODUCT APPLICATION

Catering Industry

The application of soybean products in the catering industry has both nutritional and economic justification. The nutritional values and sensory properties are improved while their energy and cholesterol values are reduced.

Slices can be used in dishes containing meat or can be cooked as a separate dish for a vegetarian diet in combination with vegetables, cheese and sauces.

TRADCON F
TRADKON SPC HC

Soy Protein Concentrates

BASIC PROPERTIES

Traditional soy protein concentrates TRADCON F and TRADKON SPC HC and are components used for a numerous applications in food processing industry.

Chemical Characteristics

Composition %	Typical values %	Guaranteed Content %	
Protein* (N x 6,25)	69,0	min. 68,0	(1)
Water	7,0	max. 8,0	(1)
Fat*	0,5	max. 1,0	(1)

**Moisture free basis • The result obtained: (1) analysis, (2) calculation*

Other Characteristics

Colour	Light
Flavour	Neutral
Odour	Neutral

Variations are possible in the values provided depending on the crude soybean quality. TRADCON F and TRADKON SPC HC are products manufactured from controlled, genetically unmodified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADCON F 200	BFC700000201	min 90% < 0,075 mm (#200 mesh US St. Sieve)	20 kg	36	720 kg
TRADCON F 100	BFC700000301	min 90% < 0,150 mm (#100 mesh US St. Sieve)	20 kg	36	720 kg
TRADKON SPC HC-200	BFC500000201	min 90% < 0,075 mm (#200 mesh US St. Sieve)	25 kg	30	750 kg
TRADKON SPC HC-100	BFC500000202	min 90% < 0,150 mm (#100 mesh US St. Sieve)	25 kg	30	750 kg
TRADKON SPC HC-30	BFC500000402	coarse	big bag	1	900 kg

Packing and Storage

Packing: TRADCON F and TRADKON SPC HC are packed and delivered in paper bags, net weight 20-25 kg. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a Euro-pallet, wrapped with stretch wrap and also labelled.

Both products are also available in big-bag packages net weight 700-900 kg.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 24 months.

PRODUCT USE

Meat Industry

TRADCON F and TRADKON SPC HC products are used in the meat industry primarily due to their high protein content with corresponding amino acids based on they are used as nutritive extenders or as a substitute for a part of meat proteins. They are predominantly used as a substitute for red meat (pork or beef), and for chicken and fish meat.

Confectionery Industry

TRADCON F and TRADKON SPC HC products are used as nutritional supplements in the confectionery industry in dosage of up to 5 percent, especially for the purpose of increasing the protein content, which is of special importance because these products are primarily intended for persons of a young age. This improves the fineness and the structure of confectionery products and prolongs their freshness.

Baking Industry

Products are used in the production of various bread types, they increase the protein content, improve the crust color, prolong product freshness and reduce crumbling.

Pasta Industry

Products are used in the preparation of pasta types of usual contents and the preparation of special pasta types for increasing the nutritional and biological value.

Catering Industry

TRADCON F and TRADKON SPC HC are used in the preparation of meals in canteen-like setting in order to improve the organoleptic properties, nutritional values and the durability of the products.

Dietetic Products

Products are used in the production of various dietetic products providing additional nutrition for professional athletes and amateurs.

Pharmaceutical Industry

In pharmaceutical industry TRADKON SPC-HC and TRADCON F are used in production of API.

TRADCON T

Textured Soy Protein Concentrate - Minced, Flakes, Chunks and Strips

BASIC PROPERTIES

The process of production of traditional soy protein concentrates involves deactivating anti-nutritional factors thus increasing the utilisation of the proteins. The removal of part of the soluble carbohydrates TRADCON T contributes to making more neutral in taste and lighter in colour compared to soy-flour based textured products. TRADCON T products have high nutritive and biological values. They are characterised by a structural integrity, remains intact during rehydration, cooking, sterilising and shearing. TRADCON T are a source of protein – i.e. essential amino acids as well as minerals and vitamins, important for the overall metabolism. They have a high capacity for absorbing and retaining water, fats and meat juices, stabilise the system and prevent fat separation and acting as an anti-oxidant.

Chemical characteristics

Composition	Typical values %	Guaranteed values %	
Protein* (N x 625)	70,0	min. 68,0	(1)
Water	9,0	max. 10,0	(1)
Fat*	0,5	max. 1,0	(1)

**Moisture free basis*

Other characteristics

Colour	light
Flavour	neutral
Odour	natural

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality.

TRADCON T traditional soy protein concentrates are manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Colour	Typical hydration (%)	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
TRADCON T Minced	BFL470000001	0,5 - 5 mm min. 85%	natural	400	15 kg	21	315 kg
TRADCON T Flakes	BFL470000013	0,5 - 6 mm min. 85%	natural	450	12 kg	21	252 kg
TRADCON T Strips	BFL470000051	5 - 30 mm min. 85%	natural	250	10 kg	21	210 kg
TRADCON T Chunks	BFL470000050	10 - 25 mm min. 85%	natural	250	10 kg	30	300 kg

Packing and Storage

Packing: TRADCON T products are packed and delivered in paper bags net weight from 10 kg to 20 kg. Each individual package is labelled with product identification data on quality and quantity. The bags are placed on a Euro pallet, wrapped in stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 24 months

PRODUCT APPLICATION

Meat industry

TRADCON T are used in the meat-processing industry. They are mainly used as extenders (repla-cement for a part of the meat in a recipe). These products show their optimum properties in their rehydrated form and rehydration in the ratio 1 : 4 is recommended. They can be used in various types of half-cooked and cooked sausages with up to 8-12% in the rehydrated form in the finished product.

They are especially suitable for application in products made of chopped and formed meat where extending the meat with them in a rehydrated form up to 25 % is recommended. TRADCON T have a lighter colour, more neutral flavour and they have somewhat stronger consistency both in their dry and rehydrated states when compared with Soprotex family of products.

Catering Industry

The application of soy products in the canteen-based diet provided in factories, schools etc. has nutritive and economic advantages. The nutritional value and sensory properties of dishes prepared in this way are considerably improved, and the cholesterol value and quantity reduced. TRADCON T MINCED products are used for the preparation of all types of hot and cold dishes made of minced or chopped meat. The use of these products is especially recommended for the preparation of dishes intended for a low-fat diet.

Vegan and Vegetarian diets

TRADCON T can be used in both vegan and vegetarian diets, in preparation of various food types and are very suitable as meat analog products.

SOPROMIX-1
SOPROMIX-HE

Functional Mixtures for the Food Industry

Produced according to production specification

BASIC PROPERTIES

SOPROMIX functional mixtures are produced by the homogeneous mixing of components, wherein the predominant components are soybean protein products. The other ingredients are natural emulsifiers and stabilising and thickening agents (soybean lecithin and hydro colloids). Mixtures are formulated to provide exceptional functionality in addition to the high nutritional value. Therefore, they are exceptionally economical alternative to soy protein isolates and functional concentrates in various meat products.

SOPROMIX functional mixtures have very mild and pleasant flavour and a neutral odour. They disperse rapidly in water and have an exceptional capacity for water and fat emulsification and binding. In isolated fat and water systems, SOPROMIX Mixtures form thermally stable, homogeneous and strong emulsions under pasteurising temperatures (90 minutes, 80°C) and sterilising conditions (30 minutes, 120°C) if the following ratio is applied:

SOPROMIX-1 fat : water = 1 : 13: 13

SOPROMIX-HE : fat : water = 1 : 16 : 16

Also, SOPROMIX Mixtures have a good gelling capability and form thermally stable and strong gels under pasteurising (90 minutes, 80°C) and sterilising conditions (30 minutes, 120°C) if the following ratio is applied:

SOPROMIX-1 water = 1 : 5

SOPROMIX-HE water = 1 : 7

Chemical Characteristics

Composition		Guaranteed values % SOPROMIX 1	SOPROMIX HE	
Protein* (N x 625)	min.	55,0	60,0	(1)
Water	max.	9,0	9,0	(1)
Fat/Lecithin*	max.	2,0	2,0	(1)
Urease activity ΔpH	max.	0,3	0,3	(1)

**Moisture free basis*

Other Characteristics

Colour	light yellow
Flavour	pleasant, overly sweat
Odour	neutral

Energy value

SOPROMIX-1	1.378 kJ (328 kcal)/100 g g	(2)
SOPROMIX-HE	1.378 kJ (328 kcal)/100 g	(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality.

Functional mixtures for the food industry: SOPROMIX-1 and SOPROMIX-HE are produced from controlled, non-genetically modified soybean (GMO<0.9%).

Product title	Product code	Granulation	Individual packing (bag)	Number of bags on the pallet	Net weight (pallet)
SOPROMIX-1	BFL510000001	min. 90%<0,045 mm (#325 mesh US St. Sieve)	25 kg	30	750 kg
SOPROMIX-HE	BFL510000020	min. 90%<0,045 mm (#325 mesh US St. Sieve)	25 kg	30	750 kg

Packing and Storage

Packing: Functional mixtures for the food industry SOPROMIX-1 and SOPROMIX-HE are packed and delivered in paper bags with LDPE insert (net weight 25 kg). Each individual package is labelled with product identification data on quality and quantity. The bags are placed on a pallet, wrapped in stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 12 months

Application in the food processing industry

There are several reasons for the use of soy products in the food processing industry:

1. Making use of the functional effects of the soy protein (water binding, expansion, viscosity, gelling, cohesion and adhesion, emulgation) enhances the sensory properties (appearance, consistency, texture, taste, juiciness) of food.

2. Adding a soy product increases the overall nutritional value of the food and it can be ranked in a group of products with special properties (healthy, dietary, dietary-therapeutic). Soy products are classified as a high-value food source since the soy products contain all the essential amino acids needed for the normal functioning of the body.

3. Using soy products in all branches of the food-processing industry, and thus in the meat processing industry, helps achieve significant economic effects through the reduction of production costs and the standardisation of quality to attain stable level.

In the meat processing industry, all three effects are important, though the most appreciated are the functional effects and the cost effectiveness of production. Soy proteins are used as both functional emulgation and stabilization supplements and nutritional extenders, i.e. meat substitutes. Although a meat product that contains soy proteins is usually cheaper than one without soy products, the buyer gets a product of equal quality. The use of Sojaprotein's products in industrial meat processing does not require the replacement of existing technology processes or the existing recipes if products of other manufacturers are used.

Sojaprotein's products are intended for industrial meat processing and they can be divided in two groups based on their application:

1. Protein emulsifiers: SOPRO-TB 200, TRADCON F, TRADKON SPC HC and SOPROMIX-1/HE

2. Nutritive extenders – the replacement of a part of the meat content: SOPRO-TB 200, TRADCON F 200, TRADKON SPC HC-200, SOPROTEX products and textured soy protein concentrate TRADCON T and TRADKON SPC-TEX. In this group, the functional property is water absorption and texture enhancement.

Soy products can be added to meat products in the following ways:

- in a dry form (in the final stage of comminuted meat preparation, before adding fat)
- in a rehydrated form (dispersion - gel)
- combined, e.g. the preparation of a soy mixture in the ratio
  SOPRO-TB 200 : SOPROTEX : WATER = 1 : 1.5 : 8

Several different preparations can be mixed and added in a dry or rehydrated state.

Dosage

The content of a single protein product added during the production of meat products depends on several factors. They are: the type of the meat product, the selection of raw materials available, the need for a certain functionality in a particular preparation, meat quality product regulations and the standardization of product quality.

Sojaprotein's products with emulgation functions are used for the preparation of emulsions that are stable at pasteurization temperatures.

In the meat processing industry TRADCON F and TRADKON SPC HC can be sucessfuly used in various meat applications. They are recomended for the production of pates and canned meat products, and also in high guality meat products where the inclusion of SPC is up to 2% dependable on the recipes. The usage of TRADCON F in a combination with other high protein products (like FSPC and ISP) keeps the functional properties intact and at the same time reduces the production costs.

TRADCON F and TRADKON SPC HC can be successfully used in various functional meat and bakery protein blends.

The use of soy protein concentrates TRADCON T is mainly related to usage as extenders – i.e. products that can replace a part of the meat in the formulations of meat processing industry products.

The most favoured usage of the TRADCON T is in products made of roughly chopped meat (meat patties – hamburgers made of various animal meats, as an ingredient in pizza topping, meat balls and other products). In these systems, TRADCON T usage is fully justifiable as a replacement for more expensive meat.

Moreover, owing to the mild taste, the taste of the meat is more distinctive and its usage also increases meat product returns. TRADCON T can be used hydrated in a typical ratio of 1:4 (TSPC:water). Also, it can be used in a dry form, where application is ranging from 3 % to 8 %.

Oil Products

CRUDE DEGUMMED SOYBEAN OIL

BASIC PROPERTIES

CRUDE DEGUMMED SOYBEAN OIL is a product obtained when soybean are processed in the production of protein products and after lecithin extraction. It is important because of the high content of linoleic acid, an essential polyunsaturated fatty acid, as well as the other valuable minor ingredients such as phytosterols, tocopherols (antioxidants) and fat-soluble vitamins.

Identification Characteristics

Characteristics	Typical values	Guaranteed values	
Relative density (20°C / water 20°C)	0,920	0,917-0,928	(3)
Refractive index n_D (20°C)	1,474	1,471-1,476	(3)
Iodine value	125	114-143	(3)
Saponification value	193	189-195	(3)
Unsaponifiable substances	0,5	up to 1,5%	(3)

The result obtained by: (1) analysis, (2) calculation, (3) periodical analysis

Quality Requirements

Characteristics	Typical values	Guaranteed values	
Colour by Lovibond (25,5 mm)		5 red 50 yellow	(1)
Appearance	clear	clear	
Odour and flavour	product inherent	product inherent	
Free fatty acids (as oleic)	0,4-1,0%	up to 1,5%	(1)
Moisture and volatile substances	0,3%	up to 0,3%	(1)
Flash point (in an open pot by Marcusson)	311°C	not lower than 220°C	(3)
Total phosphorus	0,015%	up to 0,015	(1)

The result obtained by: (1) analysis, (3) periodical analysis

Variations are possible in the values provided depending on the crude soybean quality.

CRUDE DEGUMMED SOYBEAN OIL is manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Delivery type
CRUDE DEGUMMED SOYBEAN OIL	BFU100000001	In bulk

Delivery and Storage

CRUDE DEGUMMED SOYBEAN OIL is delivered in bulk. The product declaration contains product identification data on quality.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 12 months.

PRODUCT APPLICATION

CRUDE DEGUMMED SOYBEAN OIL is predominantly used in the form of oils and vegetable fats in human nutrition, following subsequent refining and hydrogenation. Vegetable oils and fats play a significant role for the human organism from the nutritional and physiological aspects. They provide the human body with essential fatty acids and fat-soluble vitamins. They represent an important source of energy and serve as one of the major components of cell walls. They stimulate the appetite and the secretion of digestive enzymes by giving dishes a pleasant flavour, odour and texture and increase one's feeling of satiety.

Technical Purposes

CRUDE DEGUMMED SOYBEAN OIL is used less frequently in the production of paints and varnishes, fatty acids, resins and plastics.

CRUDE SOYBEAN LECITHIN

BASIC PROPERTIES

CRUDE SOYBEAN LECITHIN is a product obtained when soybean are processed in the production of protein products and crude degummed oil. It is extracted from the oil by centrifugation. It is a viscous mass with an amber colour and a specific odour and flavour.

CRUDE SOYBEAN LECITHIN is a natural mixture of phospholipids and oil with distinctive surface activity due to its combination of lypophilic and hydrophilic features in the phospholipid molecules.

CRUDE SOYBEAN LECITHIN is an excellent emulsifying agent, dispersing agent for hard particles, foam stabiliser, watering and release agent, and crystallisation controller. It has distinctive dietetic and therapeutic properties and is recommended as a dietary supplement.

CRUDE SOYBEAN LECITHIN contains a minimum 65% of phospholipids (lecithin).

Identification Characteristics

Characteristics	Typical values	Guaranteed values	
Consistency	plastic	plastic	(1)
Colour (Gardner, 5% lecithin solution in mineral oil)	10.0 amber	max. 12	(1)
Odour and flavour	product inherent	product inherent	
Acetone insolubles (phospholipids)	70	min. 65	(1)
Acid value (mg KOH/g)	22	max. 26	(1)
Peroxide value (meq O_2/kg)	0	max. 5,0	(1)
Toluene insolubles (%)	0,3	max. 0,3	(1)
Moisture and volatile substances (%)	0,5	max. 1,0	(1)
Energy value	3.400 kJ (812 kcal)/100 g		(2)

The result obtained by: (1) analysis, (2) calculation

Variations are possible in the values provided depending on the crude soybean quality. CRUDE SOYBEAN LECITHIN is a product manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Package
CRUDE SOYBEAN LECITHIN	BFU200000001	In bulk
CRUDE SOYBEAN LECITHIN	BFU200000002	200 kg
CRUDE SOYBEAN LECITHIN	BFU200000003	60 kg

Packing and Storage

Package: CRUDE SOYBEAN LECITHIN is delivered in bulk and in matal or PE barrels (net weight 60 kg and 200 kg). Each individual package is labelled with product identification data on quality and quantity.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 18 months.

PRODUCT APPLICATION

Confectionery Industry

CRUDE SOYBEAN LECITHIN is used in the production of various types of chocolates, chocolate products and toppings, and cacao spreads. It is added in quantities of up to 1% as calculated per the other ingredients. In addition to its favourable effect on the technological properties of the product, soya lecithin also has dietetic effects.

Dietetics and Pharmaceutics

This product has distinctive dietetic and therapeutic properties. By protecting both the cardiovascular and nervous systems, it is beneficial to the body's vitality and therapy for already existing pathophysiological conditions. Therefore, it is used for the production of dietetic and pharmaceutical products, for supplementary diets for sportsmen and amateurs, as well as for the manufacture of cardio tonics and other products.

Baking Industry

CRUDE SOYBEAN LECITHIN is used as an emulsifier in the production of all types of bread and pastry, and specifically those where fats are used. The recommended quantity to add ranges from 0.3 to 0.5% depending on the quantity of wheat flour. In addition to its favourable effect on the technologic properties of a product, soya lecithin has a distinctive dietary effect.

Products for Animal Feed

TradKon SPC

Today, animal nutrition cannot be imagined without soy products, which results from the demand for new ingredients in the preparation of animal food and the development and emergence of new soy products on the market. In animal nutrition, soy protein concentrates are becoming increasingly prevalent. Since soy contains several factors with anti-nutritional properties, the processing requires adequate treatment in order to eliminate ingredients that can limit the application of soy products in the nutrition of certain kinds of animal, especially younger categories with undeveloped digestive tracts.

Soy protein concentrates are ranking among the top products in the soy processing system. They have considerably higher nutritive value compared to soybean meal and are characterized by a lower level of oligosaccharides (<3%).

Especially important, Tradkon SPC products have very low typical values for antigenic factors: less than 3 ppm for both glycinine and β-conglycinine. Also, trypsin inhibitor activity (TIA) has a low typical value less than 2 mg/g.

PRODUCT NAME	VEAL CALVES FEED	REARING CALVES FEED	PIGLET FEED	POULTRY FEED	AQUA FEED	PET FOOD	RUMINANTS	PAGE
TRADKON SPC-63 V	●	●						46
TRADKON SPC-75	●	●				●		47
TRADKON SPC-500P			●	●		●		48
TRADKON SPC-500F					●			49
SOY MOLASSES							●	50

SPC are a cost-effective alternative for high-quality proteins of animal origin such as skimmed milk powder or fish flour in the nutrition of calves, pigs, chickens and pets. In the growing aquaculture sector, the need for a replacement of fish flour and other animal by-products is becoming increasingly evident.

There are three reasons for that: the limited production of fish flour, customer concerns about food safety in the light of dioxin-like toxicity, and ethical barriers to the use of edible proteins in animal nutrition considering the rise in the world population. In aquaculture, SPCs have a great potential to replace a part of the protein-based fish flour in Salmonidae nutrition.

TradKon SPC

PACKING AND STORAGE

Package: Traditional soy protein concentrates TradKonSPC are packed and delivered in paper bags with LDPE insert, in “big bags” and in bulk. Each individual package is labelled with product identification data on quality and quantity on a multi-language label. The bags are placed on a pallet wrapped in a stretch wrap and labelled.

Storage: Keep in a cool dry place, protected from outside hazards.

Shelf life: 24 months.

TRADKON SPC-63 V

Traditional Soy Protein Concentrate

Calf Milk Replacement

PRODUCT USE

TRADKON SPC-63 V is a calf milk replacement product recommended for veal and rearing calves feed.

Chemical characteristics

Composition	Guaranteed values (as is)	
Protein (N x 625)	min. 65,0 %	(1)
Water	max. 8,0 %	(1)
Iron	max. 130,0 ppm	(3)
Fat	max. 0,5 %	(1)

VERY LOW level of antinutritive factors (guaranteed values):
Trypsin inhibitor activity < 2 mg/g ; Glycinine < 3 ppm ; β-conglycinine < 3 ppm

Other characteristics

Colour	natural
Flavour	product inherent
Odour	neutral
Appearance	very fine powder

The result obtained by: (1) analysis, 3) periodical analysis

Variations are possible in the values provided depending on the crude soybean quality. Traditional soy protein concentrates are manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-63 V	BFC100000001	min. 98% < 63 microns	25 kg	30	750 kg
TRADKON SPC-63 V	BFC100000002	min. 98% < 63 microns	big bag	1	900 kg
TRADKON SPC-63 V	BFC100000003	min. 98% < 63 microns	in bulk	-	-

TRADKON SPC-75

Traditional Soy Protein Concentrate

Calf Milk Replacement

PRODUCT USE

RADKON SPC-63 V is a calf milk replacement product recommended for rearing and veal calves feed.

Chemical characteristics

Composition	Guaranteed values (as is)	
Protein (N x 625)	min. 65,0 %	(1)
Water	max. 8,0 %	(1)
Iron	max. 130,0 ppm	(3)
Fat	max. 0,5 %	(1)

VERY LOW level of antinutritive factors (guaranteed values):
Trypsin inhibitor activity < 2 mg/g ; Glycinine < 3 ppm ; β-conglycinine < 3 ppm

Other characteristics

Colour	natural
Flavour	product inherent
Odour	neutral
Appearance	fine powder

The result obtained by: (1) analysis, 3) periodical analysis

Variations are possible in the values provided depending on the crude soybean quality. Traditional soy protein concentrates are manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-75	BFC100000201	min. 98% < 75 microns	25 kg	30	750 kg
TRADKON SPC-75	BFC100000202	min. 98% < 75 microns	big bag	1	900 kg
TRADKON SPC-75	BFC100000203	min. 98% < 75 microns	in bulk	-	-

TRADKON SPC-500P

Traditional Soy Protein Concentrate

PRODUCT USE

TRADKON SPC-500P is primarily used for piglet and poultry feed.

Chemical characteristics

Composition	Guaranteed values (as is)	
Protein (N x 625)	min. 62,0 % *	(1)
Water	max. 8,0 %	(1)
Fat	max. 0,5 %	(1)

** Products with 60% of proteins are also available*

VERY LOW level of antinutritive factors (guaranteed values):
Trypsin inhibitor activity < 2 mg/g ; Glycinine < 3 ppm ; β-conglycinine < 3 ppm

Other characteristics

Colour	natural
Flavour	product inherent
Odour	neutral
Appearance	granular

The result obtained by: (1) analysis

Variations are possible in the values provided depending on the crude soybean quality. Traditional soy protein concentrates are manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-500P	BFC100000401	coarse	25 kg	30	750 kg
TRADKON SPC-500P	BFC100000412	coarse	big bag	1	1000 kg
TRADKON SPC-500P	BFC100000403	coarse	in bulk	-	-

TRADKON SPC-500F

Traditional Soy Protein Concentrate

PRODUCT USE

TRADKON SPC-500F is primarily used for aqua feed.

Chemical characteristics

Composition	Guaranteed values (as is)	
Protein (N x 625)	min. 60,0 %	(1)
Water	max. 8,0 %	(1)
Fat	max. 0,5 %	(1)

Other characteristics

Colour	natural
Flavour	product inherent
Odour	neutral
Appearance	granular

The result obtained by: (1) analysis

Variations are possible in the values provided depending on the crude soybean quality. Traditional soy protein concentrates are manufactured from controlled, non-genetically modified soybean (GMO <0.9%).

Product title	Product code	Granulation	Individual packing	Number of bags on the pallet	Net weight (pallet)
TRADKON SPC-500F	BFC100000612	coarse	big bag	1	1000 kg
TRADKON SPC-500F	BFC100000603	coarse	in bulk	-	-

SOY MOLASSES

Feed Ingredient from SPC production

PRODUCT USE

Soy Molasses is used as feed ingredient in mixed feedstuffs, added to soy hulls and soybean meal, and can be used in liquid feed diets. Containing sucrose and oligosaccharides it is used as an energy source, taste enhancer, and as a binding agent. It also serves as a mild laxative and general digestive aid. Owing such positive characteristics, the value of feeding molasses to livestock is videly recognized.

Chemical characteristics

Composition	Guaranteed values (%)	
Protein (N x 6,25), dry base	max. 12,0	(1)
Dry matter	55,0 ± 10	(1)
Fat, dry base	max. 3,5	(1)
Carbohydrates	45,0 by difference	(1)

Other characteristics

Colour	Dark brown	
Odour	Typical	
Consistency	Typical - dense	
Bulk density (60°C) (g/ml)	1,2-1,3	(2)
Energy value	914 kJ (259 kcal) / 100g	(3)

Results obtained: (1) analysis, (2) periodical analysis, (3) calculated

Product title	Product code	Consistency	Individual packing	Number of bags on the pallet	Net weight (pallet)
Soy Molasses	BFZ150000001	thick (viscous) liquid	in bulk	-	-

Storage: Keep in a cool dry place, protected from outside impacts.

Shelf life: 12 months.

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