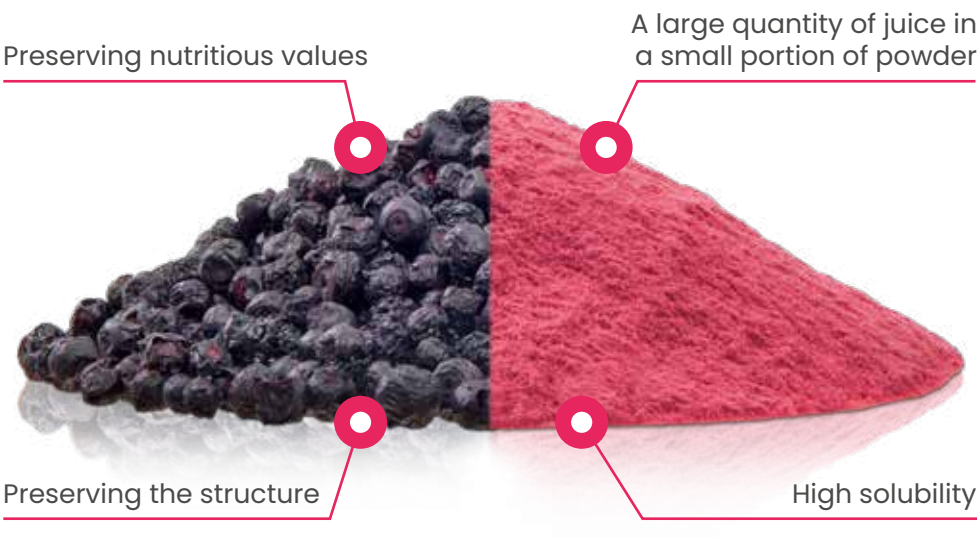
NATURAL
FOOD INGREDIENTS

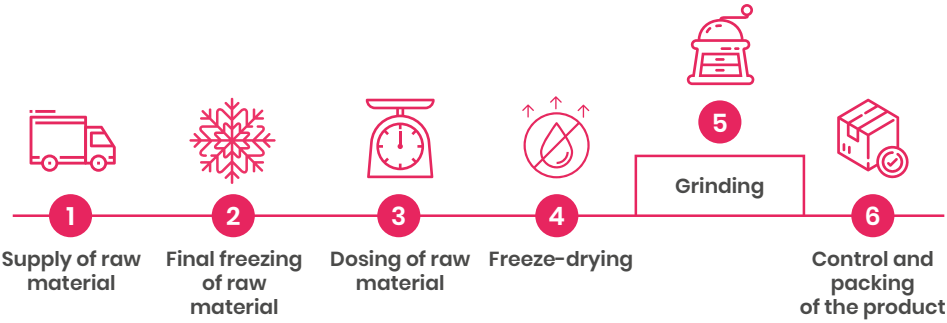


FREEZE-DRYING

SPRAY DRYING

• FREEZE-DRYING •

How does freeze-drying go?



What is freeze-drying?

Freeze-drying is considered **most preserving process** of drying that consists in the sublimation of water vapors from products with the omission of the liquid phase. The process is conducted in low temperatures in high vacuum conditions.

Application:

- Breakfast muesli
- Instant soups
- Fruit chips
- Teas
- Milk produce
- Desserts (starch jellies, puddings, jellies)
- Baby foods
- Confectionery
- Dietary supplements

Available variants:

- Whole
- Cubes
- Slices
- Grit
- Powder

• SPRAY DRYING •

What is spray drying?

Spray drying means processing liquid raw materials into powdered substances that, **after dilution in water, regain most of the input material characteristics.**

How does spray drying go?

1. **Supply of raw material**
2. **Weighing and feeding of raw material**
3. **Mixing of raw material** (with potential homogenization of the mixture)
4. **Spray drying**
5. **Control and packing of the product**

Application:

- Jellies, starch jellies, puddings
- Instant soups
- Instant drinks
- Leafteas
- Milk produce (desserts, yogurts, cheese)
- Confectionery
- Natural colorings

Available variants:

- Powder

• PRESSURE GRANULATION •

How does pressure granulation go?

1. **Supply of raw material**
2. **Weighing and mixingraw materials** (optionally)
3. **Pressure-granulation**
4. **Product screening and sorting**
5. **Control and packing of the product**

What is pressure granulation?

Pressure granulation is a process changing the form of powdered products into granulate. The powders, under the high pressure, are given the form of fine grains to **improve their technological features and widen the application range.**

Application:

- Dietary supplements
- Instant drinks
- Tea bags
- Confectionery
- Animal food
- Flavoring and functional additive
- Various food products (and not only) where technological problems need solving

Available variants:

- Group 1: granules 1-2.5 [mm]
- Group 2: granules 1-4 [mm]

• MACHINERY PARK •

The production of natural food ingredients is based on three technological lines:

- continual and periodic production line for fruit and vegetable freeze-drying
- production of natural food additives in the form of powders, based on the spray drying technology
- installation for pressure granulation of powdered food additives

The production is performed in standardized conditions on modern technological lines and under the supervision of specialized staff.

The Celiko Safety Management System is compliant with the requirements:

- FSSC 22000
- ISO 22000:2005

• EXPERIENCE •

- **1982 - Zenon Kosicki founds CELIKO.** The company specializes in food production for elimination diets, including coeliac disease
- **1998 - start-up of natural food additives production department**
- **1999 - Celiko obtains the ISO Quality Certificate** according to PN – EN ISO 9001:1996
- **2001 - the launch of freeze-dried fruit and vegetables production**
- **2003 - the launch of spray dried fruit powders production**
- **2012 - FRUPP brand introduction** - the first freeze-driedfruit bar islaunched in retail.
- **2015 - the promotional emblem Teraz Polska (Poland Now) for FRUPP freeze-dried fruit bars**
- **2018 - development of food ingredients production lines**

The advantages of our products:

• FREEZE-DRIED FRUIT AND VEGETABLES •

- Almost total preservation of organoleptic features (flavor, aroma, color, structure, shape) of raw materials
- No losses of nutrients contained in the input raw materials (e.g. vitamins)
- Quick rehydration and/or solubility due to porous structure

• SPRAY DRIED FRUIT AND VEGETABLE POWDERS •

- High level preservation of organoleptic features (flavor, aroma, color) of raw materials
- Easily soluble
- Pressure granulation options (various sizes of granules)

• GRANULATES •

- preservation of all organoleptic (flavor, aroma, color) and nutritious features of spray dried powders
- easy to dose

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