

PRODUCT SPECIFICATION

POTATO STARCH "Superior Standard"

The edition number 13 from November 08, 2022 replacing edition number 12 from October 12, 2021.

1. PRODUCT CHARACTERISTIC

The subject of this description is a potato starch obtained by mechanical separation from the other potato component parts, then rinsed, cleaned, dried and sifted. The product has a form of uniformed white powder, with no clusters or lumps with taste and smell typical for potato starch.

- 1.1. Class type of product depending on purity degree:
 - "Superior Standard"
 - "Superior"

2. RAW MATERIAL COMPOSITION

- industrial potatoes, starch potatoes

3. QUALITY

3.1. Potato starch "Superior Standard" is meeting all the requirements of PN-93/A-74710.

3.2. Physicochemical parameters.

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| Properties Requirements | | Tests methods | |
|---|---|--|--|
| Taste/ smell | typical for potato starch, no extraneous flavour | ZN-A/03-2002/S-2 | |
| Colour | clean white - acc. to CIE,L system not less than 93 | TJ.26 | |
| Moisture [%] | less than 20,0 | PN-EN ISO1666:2000 | |
| рН | 6,0-7,5 | ZN-A/07-2002/S-6 | |
| Contents of ash in dry mass[%] | less than 0,35 | PN-EN ISO3593:2000 | |
| Contents of mineral substances undissolved in 10% aqueous solution , in dry mass [%] | less than 0,06 | ZN-A/09-2002/S-8 | |
| Contents of sulphur dioxide [mg/kg] | 0-10 | ZN-A/10-2002/S-9 | |
| Macroscopic contamination [amount of specks in 1 dm²] | less than 50 with 20% tolerance | ZN-A/05-2002/S-4 | |
| Contents of metals (mg/kg | g): | | |
| Arsenic (As) | less than 0,100 | PN-EN 15763:2010 | |
| Lead (Pb) | ad (Pb) less than 0,100 | | |
| Cadmium (Cd) | less than 0,01 | PN-EN 15763:2010 | |
| Mercury (Hg) | less than 0,01 | PN-EN 15763:2010 | |
| Cooper (Cu) | less than 0,30 | PB-223/ICP ed. II dated 12.01.2015 | |
| Iron (Fe) | less than 8,0 | PB-223/ICP, ed. II dated 12.01.2015 | |

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3.3. Microbiologic parameters of class type "Superior Standard".

| Features | Requirements | Test methodology | |
|--|-----------------------|-----------------------------------|--|
| Total amount of germs in 1 g | less than 10-5000 cfu | PN-EN ISO 4833-2:2013-12 | |
| Total amount yeast and mould in 1 g | less than 50 cfu | PN-ISO 21527-2:2009 | |
| Bacillus cereus in 1 g | less than 10 cfu | PN-EN ISO 7932:2005 | |
| Coli group bacteria in 1 g | less than 10 cfu | PN-ISO 4832:2007 | |
| Staphylococcus koagulase-positive (staphylococcus aureus and other species in 1 g) | absent | PN-EN ISO 6888- 3:2004+AC:2005 | |
| Salmonella in 25 g | absent | PN-EN ISO 6579-1:2017-04 | |
| Clostridium botulinum in 1 g | absent | PN-A-86730:1989 | |
| Clostridium perfringens in 1 g | absent | PN-EN ISO 7937:2005 | |
| Escherichia coli w 1 g | absent | PN-ISO 7251:2006 | |
| Anaerobic sulphite-reducing spore-forming bacteria in 1 g | absent | PN-A-75052-10:1990 | |
| Germs from Enterobacteriaceae family in 1 g | less than 10 cfu | PN-ISO 21528-2:2017-0 | |

4. NUTRITION VALUE IN 100 GRAM OF THE PRODUCT

Nutrition value – 324 kcal (1356 kJ) Carbohydrates content (starch) - 80 g Protein content – max 0,30 g Fat content – max. 0,10 g

5. GMO AND ALLERGENS STATEMENT

Potato starch does not contain allergens.

Potato starch has non GMO status and is not produced from genetically modified sources.

6. CONSUMER PURPOSE

In food industry as thickening agent for soups, sauces, etc., in production of cold sweet soups, for baking cakes, in production of dextrins, starch hydrolysates, starch syrups, glucose, starch modifying agents. In textile industry for aperturing of textiles. Furthermore used in: paper industry, mining industry, pharmaceutical, casting industry as well as in housekeeping. Potato starch is used also in production of flocculating biodegradable agents, glues and other technical preparations. There are no contraindications for using the product.

Product for further processing, not suitable for direct consumption.

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7. PACKAGING

Potato starch is packed in accordance with PN-88/A-74705, in multi-valve paper bags with capacity of 25 kg net, polypropylene big-bags of 1000 kg or unit paper packaging of 0,5 kg and 1,0 kg.

Packaging has been certified by PZH

Marking includes the following data:

- -name and address of producer
- -name of product,
- -class type of product,
- -net weight in kg.
- -production date,
- -shift number.
- -expiry date,
- -lot number.

There is possibility to pack and mark the product according to individual requirements of the customer.

8. TERM AND STORAGE CONDITIONS

Potato starch should be stored in accordance with PN-88/A-74705, in a dry, clean and airy room without foreign smell with recommended relative air humidity below 75 % and temperature below 20°C.

Shelf life 5 years from production date.

9. TRANSPORT CONDITIONS

Transportation has to be well-kept and be in good technical condition protecting from contamination and assuring proper quality of goods in terms of health and especially protection from moisture.

10. DELIVERY DOCUMENTS

Certificate of Analysis

All the information and data contained herein are based on our long-term experience and supported by scientific knowledge. However, this document is of informative nature only. Should you have any doubts we will be happy to provide you with detailed information and answer all your questions.

| | Name and surname | Position | Date | Signature |
|---------------|-----------------------------|------------------------------------|------------|-------------------|
| Elaborated: | Monika Mikulska- Przepiórka | Quality Control Manager | 08.11.2022 | Mikulska-Prepiork |
| Checked by: | Marzena Lis | Deputy Sales Manager | 08.11.2022 | Cours |
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