Potato Industry Company



PRODUCT SPECIFICATION

MALTODEXTRIN

"Low-saccharified", "Medium-saccharified", "High-saccharified"

The edition number 6 from the January 13, 2017 replacing edition number 5 from the July 30, 2015.

1. PRODUCT CHARACTERISTICS

Maltodextrin is an enzymatic product of aqueous potato starch suspension depolymerisation intended for consumption purposes.

Maltodextrin is a composition consisting of polysaccharides (approximately 30-70% of the maltose) and oligosaccharides.

- 1.1. Product division depending on the hydrolysis degree of used starch the following maltodextrin types are being distinguished:
 - low-saccharified N
 - medium-saccharified S
 - high-saccharified W

2. MATERIAL COMPOSITION

- Potato starch,
- Enzymes liquid preparation α-amylase hydrolyzing potato starch.

3. QUALITY REQUIREMENTS

3.1. Physico-chemical parameters.

| Properties | Quality parameters | | eters | Tests method | |
|---|---------------------------|---------|--------|---------------------------|--|
| Maltodextrin | L | M | Н | | |
| Form | friable powder | | ler | ZN - 95/MRiGŻ - I -08/175 | |
| Colour | white to slightly creamy | | | ZN - 95/MRiGŻ - I -08/175 | |
| Flavour | sweetish to sweet | | | ZN-A/16-2002/M-2 | |
| Odour | typical for maltodextrins | | | ZN-A/16-2002/M-2 | |
| Water-solubility | complete | | | ZN-95/MRiGŻ-I-08/175 | |
| Mechanical impurities | non-allowable | | | ZN-A/05-2002/S-4 | |
| Moisture content %, not more | max.10 | | | ZN-A/18-2002/M-4 | |
| than | | | | | |
| Ash content in dry matter %, | | | | PN-EN ISO 3593:2000 | |
| not more than | 0,2 ÷ 0,4 | | | | |
| pH value | 5 ÷ 7 | | | ZN-A/19-2002/M-5 | |
| Reducing saccharide content in dry matter converted to glucose (DE – dextrose equivalent) | 5 ÷ 11 | 11 ÷ 20 | 20 ÷30 | ZN-A/20-2002/M-6 | |
| , | 1 | | | | |
| Acid-insoluble mineral content (in 10% hydrochloric acid)(in %) | 0,1 | | | ZN – 95/MRiGŻ – I –08/175 | |

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| Content of metals in mg/kg | j: | |
|----------------------------|-----------------|-----------------------------------|
| Arsenic (As) | less than 0,100 | PN-EN 15763:2010 |
| Lead (Pb) | less than 0,100 | PN-EN 15763:2010 |
| Zinc (Zn) | less than 0,80 | PB-232/ICP, ed. II of 12.01. 2015 |
| Cadmium (Cd) | less than 0,01 | PN-EN 15763:2010 |
| Mercury (Hg) | less than 0,01 | PB-30/CVAAS, ed. V of 18.09.2015 |
| Copper (Cu) | less than 0,30 | PB-232/ICP, ed. II of 12.01.2015 |
| Iron (Fe) | less than 8,0 | PB-232/ICP, ed. II of 12.01.2015 |

3.3. Microbiological parameters.

| Features | Quality parameters | Test method |
|---|-----------------------|-----------------------|
| Total aerobic bacteria count per 1 g | less than 10-1000 cfu | PN-EN |
| | | ISO 4833-2:2013-12 |
| Total yeast count per 1 g | no more than 50 cfu | PN-ISO 21527-2:2009 |
| Total mould count per 1 g | no more than 50 cfu | PN-ISO 21527-2:2009 |
| Bacillus cereus count per 1 g | no more than 10 cfu | PN-EN ISO 7932:2005 |
| Coli group bacteria | no more than 10 cfu | PN-ISO 4832:2007 |
| Escherichia coli per 1 g | absent | PN-85/A-79033 |
| Coagulase-positive staphylococci per 1 g | absent | PN-EN ISO 6888-3:2004 |
| Salmonella per 25 g | absent | PN-EN ISO 6579:2003 |
| Anaerobic sulphite reducing bacilli per 1 g | absent | PN-ISO 15213:2005 |
| Enterobacteriaceae per 1 g | no more than 10 cfu | PN-ISO 21528-2:2005 |

4. NUTRITION VALUE IN 100 GRAM OF PRODUCT

Nutrition value - 400 kcal (1680 kJ)

5. GMO AND ALLERGENS STATEMENT

Maltodextrin does not contain allergens.

Maltodextrin has Non - GMO status and is produced from no genetically modified sources.

6. CONSUMER USE

It is a component of all types of pomades and interleaves in confectionery products protecting them against sugar hardening and crystallisation; prolongs the freshness of pastry goods and bakery products; stabilises mayonnaise consistency; used for tablet coating or as a component of nutritional and refreshing beverages; a sweetener for diabetics, in dietetic products, as a carrier in colorant; fragrance and juice drying, in production of processed; cured and/or smoked meat products; frozen cream;, ice-cream powder, soups, sauces, etc. Due to their filling thickening and stabilising properties, maltodextrin find application in production of baby food (modified milk and as component of baby foods).

7. PACKAGING

Paper multilayer valve bags, 15 and 20 kg, placed of Euro-palettes, as well as other packaging as agreed upon with purchaser. All packaging being in use has PZH (National Institute of Public Health – National Institute of Hygiene) food contact approval certificates.

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Packaging marking contains the following information:

- a) name and address of manufacturer
- b) product markings according to Section 1.2
- c) product net weight
- d) identification code according the following pattern: palette number / bag number / work party
- e) production date
- f) minimum durability date, proceeded by the following words: best used before the end of ..., followed by day, month and year
- g) storage conditions

8. STORAGE PERIOD AND CONDITIONS

Maltodextrin should be stored in dry, clean and airy rooms without foreign smell, with relative air humidity to 75% and temperature to 20°C.

The minimum storage period is 24 months from the 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 DOCUMENT

Certificate of quality

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 |
|--------------|----------------------------|---------------------------|------------|--------------------|
| Prepared by: | Monika Mikulska-Przepiórka | Quality Control Manager | 13.01.2017 | Mikutsho-Przepiort |
| Verified by: | Marzena Lis | Deputy Sales Manager | 13.01.2017 | Com |
| Approved by: | Elżbieta Kobiałka | Technical Deputy Director | 13.01.2017 | Chelop |