



## Technical Specifications for

# DEGERMED MAIZE (CORN) GRITS

Commodity code: **CERMML050**

Version: **1, adopted 2019**

Replacing: **Crushed maize ver. 14, dated 20 Aug 2014**

Date of **OSCQ** issue: **11.01.2019**

*This version replaces the ver 14.0 adopted in 20/08/2014*

*The adjustments are:*

*1. Alignment with Codex Stan 155-1985 on degermed maize (Corn) meal and maize (corn) grits*

## 1. SCOPE

This specification applies to **Degermed Maize (Corn) Grits** for human consumption milled from kernels of maize, *Zea mays* L. that WFP purchases and/or distribute to beneficiaries.

## 2. REFERENCES

Unless otherwise specified in, **Degermed Maize (Corn) Grits** must comply with the following guidelines or standards (latest versions):

- Codex standard for degermed maize (Corn) meal and maize (corn) grits: Codex STAN 155-1985, Revision 1995
- Recommended international code of practice: General principles of food hygiene CAC/RCP 1-1969, Rev. 4 - 2003 including Annex "Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its application".
- General standard for contaminants and toxins in food and feed: CODEX STAN 193- 1995.
- Maize in human consumption, FAO, 1992.

## 3. DEFINITION

The **Degermed Maize (Corn) Grits** is the food prepared from fully mature, sound, degermed, kernels of maize (corn), *Zea mays* L., cleaned from impurities, mould, seeds of weeds and other cereals, by a grinding process in which the grain is comminuted to a suitable degree of fineness and from which bran and germ are almost completely removed.

## 4. PRODUCT SPECIFICATIONS

### 4.1 General requirements

**Degermed Maize (Corn) Grits** shall be:

- Safe and suitable for human consumption
- Free from abnormal flavours, odours and living insects
- Free from filth (impurities of animal origin, including dead insects) in amounts which may represent a hazard to human health.

### 4.2 Specific requirements

**Degermed Maize (Corn) Grits** must conform to the requirements specified in table 1.

## 4.3 Contaminants

### 4.3.1 Heavy metals

**Degermed Maize (Corn) Grits** shall conform to those maximum limits for heavy metals established in Codex Standard and/or location regulations/standards of a receipt country.

### 4.3.2 Pesticide residues

**Degermed Maize (Corn) Grits** shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this commodity.

The product shall be handled with special care under good manufacturing practices, so that residues of those pesticides which may be required in the production, storage of the raw materials or the finished food do not remain, or, if technically unavoidable, shall comply with maximum residue limits established by the Codex Alimentarius Commission for this commodity.

### 4.3.3 Mycotoxins

**Degermed Maize (Corn) Grits** shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity.

## 4.4 Hygiene

- It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the *Recommended International Code of Practice – General Principles of Food Hygiene* (CAC/RCP 1-1969), and other Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to these products.
- To the extent possible in good manufacturing practice, the product shall be free from objectionable matter.
- When tested by appropriate methods of sampling and examination, the product:
  - shall be free from micro-organisms in amounts which may represent a hazard to health;
  - shall be free from parasites which may represent a hazard to health; and – shall not contain any substance originating from micro-organisms in amounts which may represent a hazard to health.

## 4.5 Shelf life

**Degermed Maize (Corn) Grits** covered by the provision of this specification shall retain above qualities for at least one year from date of manufacture when stored dry at ambient temperatures prevalent in the country of destination.

## 5. PACKAGING

### 5.1 General requirements

**Degermed Maize (Corn) Grits** covered by the provision of this specification must be packed in appropriate packaging which safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product. The packaging shall be made of substances which are safe and suitable for their intended use (food grade). The packaging should not impart any toxic substance or undesirable odour or flavour to the product.

## 5.2 Packaging requirements

### 40/50 kg PP bags

- Countenance: fit to contain 40/50kg of product or as per *Contractual* requirements.
- Virgin woven polypropylene (PP) (no recycled material or colorant allowed)
  - 40 Kg: typical size 55 x 90 cm, Minimum PP grammage of 100 gsm – typical weight 110 gr
  - 50 Kg: typical size 60 x 100 cm, Minimum PP grammage of 110 gsm – typical weight 130 gr
- Minimum meshing 10 x 10,
- Minimum Denier 1000,
- Heat cut to prevent fibrillation,
- Sewn with a double folded bottom with a minimum 4 dots per inch.

### Inner Liner

- Virgin Low Density Polyethylene (LDPE) (no recycled material or colorant allowed)
- Minimum PE thickness: 100 µm,
- Easy sealable material
- The bottom must not be hollowed when the bottom of outer bag is sewn

It is under supplier responsibility to select a packaging material that will protect commodity from excessive humidity, unhygienic handling at any stage of storage and transportation.

- Food grade materials compliant with national regulations in the country of production and reception
- Properly double stitched from top and bottom with no leakages.
- The bags that have already been used for packing other articles such as fertilizers, cement, chemicals etc. should not be reused for packing of **Degermed Maize (Corn) Grits**.

### Tests:

The bags of the product must pass the drop test (after each drop, there shall be no rupture or loss of contents) following the principles of the drop test standard (EN 277, ISO 7965-2, ASTM D5276 or equivalent) with following sequence:

- Butt dropping: Bag is dropped from a height of 1.20m on the bottom and the top of the bag.
- Flat dropping: Bag is dropped from a height of 1.60m twice on one flat face and twice on the opposite flat face.

Unless otherwise specified in the contract, two percent marked bags (included in the price) must be sent with the lot.

## 6. MARKING

The labelling of the product covered by the provision of this specification shall comply with following requirements. The following information should be available on bags:

- Name of the product
- Net weight
- Name and address of the supplier (including country of origin)
- Production date (mm/yyyy)
- Best before End (mm/yyyy)
- Batch/lot identification
- Storage instructions
- Not for sale

Additional marking may be required as per contract and/or Country specific National Regulations on product labelling.

## 7. STORING

**Degermed Maize (Corn) Grits** covered by the provision this specification must be stored under dry, ventilated and hygienic conditions and far from all sources of contamination.

## 8. SAMPLING REQUIREMENTS

Representative samples must be drawn according to international sampling standard in supplier's warehouse and/or the bagging section. For **Degermed Maize (Corn) Grits** packed in bags, sampling rule in Gafta 124 shall be applied.

## 9. ANALYTICAL REQUIREMENTS

**Table 1:** List of compulsory tests and reference methods

No	Tests	Requirements	Reference methods (or equivalent, Latest edition)
1	Organoleptic characteristics	Pleasant smell; Typical taste and colour	Organoleptic examination
2	Filth	MAX. 0.1% (by weight)	
3	Discolour grits	MAX. 0.5% (by weight)	
4	Foreign matter	MAX. 0.5% (by weight)	
5	Grits of other colour	MAX. 0.5% (by weight)	
6	Moisture content	MAX. 14.0 % (w/w)	ISO 6540 AOAC 9450.46B
7	Crude Protein	MIN. 7.0 % (w/w)	AOAC 981.10 ISO 1871:1975
8	Crude Fat	MAX. 2.25 % on a dry weight basis	AOAC 945.38F; 920.39C ISO 5986
9	Crude fiber	MAX. 1.0 % on a dry weight basis	AOAC 962.09
10	Total ash	MAX. 1.0 % on a dry weight basis	ISO 2171 AOAC 923.03
11	Mesophyllic aerobic bacteria	MAX. 100,000 cfu/g	ICC No 125 ICC No 133 AACC 42-11
12	Yeast and Mould	MAX. 1,000 cfu/g flour	ICC No 146
13	Peroxide value	MAX. 10.0 meq/kg fat	AOAC 965.33
14	Total aflatoxin (B1+B2+G1+G2)	MAX. 20.0 ppb	AOAC 972.26
15	Granulation	95% or more shall pass through a 2.00mm sieve and 20% or less through a 0.71mm sieve	AOAC 965.22 AACC 66-20
16	GMO (Only if required)	Negative (<0.9% of GMO material)	Quantitative PCR ISO 21570