Technical Specifications for:

WHITE SUGAR

ICUMSA 150

Specification reference: **White Sugar ICUMSA 150**
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1. SCOPE

This specification applies to **White Sugar ICUMSA 150 (White sugar)** distributed by WFP.

2. REFERENCE

CODEX STAN 212-1999 (2001 revision).

3. PRODUCT SPECIFICATION

3.1 General requirements

White Sugar is purified and crystallised sucrose (saccharose) of sound, fair and marketable quality, dry, in homogeneous granulated, free-flowing crystals. The white crystal sugar is from a crop of the year. **White sugar** of the standard quality shall have the following characteristics:

- Taste and smell: Natural
- Polarization: 99.5°Z min
- Moisture: 0.10 % m/m max
- Invert sugar: 0.10 % m/m max
- Conductivity ash: 0.10 % m/m max
- Colour of the solution: 150 ICUMSA units max

3.2 Food additives

Sulphur dioxide (SO_2)

The maximum permitted sulphur dioxide level in **White sugar** is 70 mg/kg.

Anticaking agents

Maximum level of 1.5 m/m singly or combination (provided that starch is not present) of following agents is permitted for use in **White Sugar**.

- Calcium phosphate, tribasic
- Magnesium carbonate
- Silicon dioxide, amorphous (dehydrated silica gel)
- Calcium silicate
- Magnesium trisilicate
- Sodium aluminosilicate
- Calcium aluminosilicate

3.3 Microbiology

Microbiological contamination in the **White Sugar** shall not exceed the following levels:

Table 1: Limit of microorganisms in **White Sugar**

Microorganisms	**Limit *(maximum)***
Yeast and Mould	20 cfu/10g
Coliforms	10 cfu/10g
Salmonella	Absent in 25g
Total plate count	100,000 cfu/10g
Thermophilic bacteria	150 cfu/10g
Flat sour spores	75 cfu/10g
Moderate Thermophilic bacteria	100 cfu/10g
Thermophilic anaerobes not producing H2S	5 cfu/10g
Thermophilic anaerobes producing H2S	5 cfu/10g

3.4 Contaminants

Heavy metals

The products covered by this Standard shall comply with the maximum limits established by the Codex Alimentarius Commission.
Limit of some specific contaminants is showed in table 2.

Table 2: Limit of contaminants in **White Sugar**

Contaminants	**Limit *(maximum)***
Arsenic (As)	0.5 (mg/kg)
Lead (Pb)	0.5 (mg/kg)
Copper (Cu)	1.0 (mg/kg)

Pesticide residues

The product covered by the provisions of this specification shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this commodity.

Radiation
As per CODEX STAN 106-1983.

3.5 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 recommended by the Codex Alimentarius Commission (CAC/RCP 1-1969), and other relevant Codes of Hygienic Practice an Codes of Practice.
The product should comply with specific limit in table 1 and with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997).

4. PACKAGING

White sugar need to be packed in 50 Kg net new sacks made of anti-slip, woven PP with a minimum weight of 85g/m2, with a polyethylene inner pocket welded to the bottom, 50 microns LPDE of 30 microns HPDE. Sacks made of woven PP are to be given a special food-grade "ultraviolet" treatment. The lower and upper edges are to be stitched together with the PE sack. They should correspond to EN standards 277.
Two (2%) percent spare bags printed with the requested marking must be shipped along with the cargo and included in the price.

5. STORING

White Sugar must be stored under dry, ventilated and hygienic conditions.

6. ANALYTICAL REQUIREMENTS

The principal analyses-tests in table 3 must be performed in order to check if the quality of **White sugar** meets above requirements. Additional analyses shall be defined in case of further quality assessment.

Table 3: List of compulsory analyses-tests and reference methods

No	**Analysis/test**	**Limit**	**Reference method** *(or equivalent)*
1	Taste	Natural	Sensorial examination
2	Smell	Natural	Sensorial examination
3	Colour of the solution	150 ICUMSA units max	ICUMSA Method GS 2/3-10 (2011)
4	Moisture content	0.10% m/m max	ICUMSA Method GS 2/1/3/9-15 (2007)
5	Conductivity ash	0.10% m/m max	ICUMSA Method GS 2/3/9-17 (2011)
6	Polarization	99.5°Z min	ICUMSA Method GS 1/2/3/9-1 (2011)
7	Invert sugar content	0.10% m/m max	ICUMSA Method GS 2/3/9-5 (2011)
8	Coliforms	10 cfu/10g max	ISO 4832
9	Salmonella	Absent in 25 g	ISO 6759
10	Yeast and Mould	20 cfu/10g max	ICUMSA Method GS 2/3-47 (1998)
11	Sulphur dioxide (SO_2)	70 mg/kg max	ICUMSA Method GS 2/1/7/9-33 (2011)
12	Arsenic (As)	0.5 mg/kg max	ICUMSA Method GS 2/3/9-25 (2007)
13	Lead (Pb)	0.5 mg/kg max	ICUMSA Method GS 2/3-24 (1998)
14	Copper (Cu)	1.0 mg/kg max	ICUMSA Method GS 9-9 (2013)