

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR SUGARS¹

CXS 212-1999

Adopted in 1999. Amended in 2001, 2019.

¹ This Standard replaced the Standards for White Sugar, Powdered Sugar (Icing Sugar), Soft Sugars, Dextrose Anhydrous, Dextrose Monohydrate, Powdered Dextrose (Icing Dextrose), Glucose Syrup, Dried Glucose Syrup, Lactose, and Fructose.

1. SCOPE AND DESCRIPTION

This Standard applies to the following sugars intended for human consumption without further processing (synonyms are in round brackets). It includes sugars sold directly to the final consumer and sugars used as ingredients in foodstuffs. The description of each of the sugars is also given below:

<u>Name</u>	<u>Description</u>
White sugar	Purified and crystallised sucrose (saccharose) with a polarisation not less than 99.7 °Z.
Plantation or mill white sugar (or any other equivalent name accepted in the country of origin in which it is sold)	Purified and crystallised sucrose (saccharose) with a polarisation not less than 99.5 °Z.
Powdered sugar (icing sugar)	Finely pulverised white sugar with or without the addition of an anticaking agent
Soft white sugar	Fine grain purified moist sugar, white in colour with a sucrose plus invert sugar content of not less than 97.0% m/m.
Soft brown sugar	Fine grain purified moist sugar, light to dark brown in colour with a sucrose plus invert sugar content of not less than 88.0% m/m.
Dextrose anhydrous	Purified and crystallised D-glucose without water of crystallisation, with a D-glucose content of not less than 99.5% m/m on a dry basis and a total solids content of not less than 98.0% m/m.
Dextrose monohydrate	Purified and crystallised D-glucose containing one molecule of water of crystallisation, with a D-glucose content of not less than 99.5% m/m on a dry basis and a total solids content of not less than 90.0% m/m.
Powdered dextrose (icing dextrose)	Finely pulverised dextrose anhydrous or dextrose monohydrate or mixtures thereof, with or without the addition of an anticaking agent.
Glucose syrup	A purified concentrated aqueous solution of nutritive saccharides obtained from starch and/or inulin. Glucose syrup has a dextrose equivalent content of not less than 20.0% m/m (expressed as D-glucose on a dry basis), and a total solids content of not less than 70.0% m/m.
Dried glucose syrup	Glucose syrup from which the water has been partially removed to give a total solids content of not less than 93.0% m/m.
Lactose	A natural constituent of milk normally obtained from whey with an anhydrous lactose content of not less than 99.0% m/m on a dry basis. It may be anhydrous or contain one molecule of water of crystallisation or be a mixture of both forms.
Fructose (laevulose)	Purified and crystallised D-fructose with a fructose content of not less than 98.0% m/m, and a glucose content of not more than 0.5% m/m.
Raw cane sugar	Partially purified sucrose, which is crystallised from partially purified cane juice, without further purification, but which does not preclude centrifugation or drying, and which is characterised by sucrose crystals covered with a film of cane molasses.

2. FOOD ADDITIVES

Antioxidants and anticaking agents used in accordance with Tables 1 and 2 of the *General Standard for Food Additives* (CXS 192-1995) in Food Category 11.1.1 (White sugar, dextrose anhydrous, dextrose monohydrate, fructose) , Food Category 11.1.2 (Powdered sugar, powdered dextrose), Food Category 11.1.3 (Soft white sugar, soft brown sugar, glucose syrup, dried glucose syrup, raw cane sugar) and Food Category 11.1.5 (Plantation or mill white sugar) are acceptable for use in foods conforming to this Standard.

Powdered sugar and powdered dextrose may have up to 5% starch added if no anticaking agent is used.

3. CONTAMINANTS

3.1 Heavy metals

3.1.1 *Raw cane sugar*

Raw cane sugar shall be free from heavy metals in amounts which may represent a hazard to human health.

3.1.2 *Other sugars*

The products covered by this Standard shall comply with the maximum limits established by the Codex Alimentarius Commission.

3.2 Pesticide residues

The products covered by this Standard shall comply with those maximum residue limits established by the Codex Alimentarius Commission for these commodities.

4. HYGIENE

It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CXC 1-1969) recommended by the Codex Alimentarius Commission, and other relevant Codes of Hygienic Practice and Codes of Practice.

The products should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods* (CXG 21-1997).

5. LABELLING

In addition to the provisions of the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985), the following specific provisions apply:

5.1 The name of the food

All products covered by this Standard must conform to the description given for that product in Section 1 of the Standard.

In addition, the following specific provision applies to powdered dextrose (icing dextrose) - the name shall be accompanied by a reference to dextrose anhydrous or dextrose monohydrate or both as appropriate.

Where the glucose syrup contains fructose above 5% it shall bear a description to reflect this.

5.2 List of ingredients

The presence of starch and the maximum amount present shall be declared on the label or containers of powdered sugar or powdered dextrose.

6. METHODS OF ANALYSIS AND SAMPLING

For checking the compliance with this Standard, the methods of analysis and sampling contained in the *Recommended Methods of Analysis and Sampling* (CXS 234-1999) relevant to the provisions in this Standard shall be used.

This text is intended for voluntary application by commercial partners and not for application by governments.

I. ADDITIONAL COMPOSITION AND QUALITY FACTORS

The composition and quality factors for the sugars covered by the Standard are set out in Table 1.

II. ADDITIONAL METHODS OF ANALYSIS

See relevant Codex texts on methods of analysis and sampling.

Table 1: Additional Composition and Quality Factors

Composition and quality factors	White sugar	PMWS	Soft brown sugars	Soft white sugars	Powdered sugar (icing sugar)	Dextrose anhydrous	Dextrose monohydrate	Powdered dextrose	Glucose syrup	Dried glucose syrup	Fructose	Lactose
Sulphated ash (% m/m)	N/A	N/A	≤ 3.5	N/A	N/A	≤0.25-on a dry basis	≤0.25-on a dry basis	≤0.25-on a dry basis	≤1.0-on a dry basis	≤1.0-on a dry basis	N/A	≤0.3-on a dry basis
Conductivity ash (% m/m)	≤0.04	≤ 0.1	N/A	≤ 0.2	≤ 0.04	N/A	N/A	N/A	N/A	N/A	≤0.1	N/A
Invert sugar content (% m/m)	≤0.04	≤ 0.1	≤ 12.0	0.3-12.0	≤ 0.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sucrose plus invert sugar content (% m/m expressed as sucrose)	N/A	N/A	≥ 88.0	≥ 97.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Loss on drying (% m/m)	≤ 0.1 ^a	≤ 0.1 ^a	≤ 4.5	≤ 3.0	≤ 0.1 ^a	N/A	N/A	N/A	N/A	N/A	≤ 0.5	≤ 6.0
Starch content (% m/m)	N/A	N/A	N/A	N/A	≤ 5.0	N/A	N/A	≤ 5.0	N/A	N/A	N/A	N/A
Colour (ICUMSA units)	≤ 60	≤ 150	N/A	≤ 60	≤ 60	N/A	N/A	N/A	N/A	N/A	≤ 30	N/A
pH (for 10% m/m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.5-7.0	4.5-7.0

N/A - not applicable

PMWS - Plantation or mill white sugar

a does not apply to white sugar in lump or cube form or to crystal candy sugar (crystal korizato) or to rock sugar (korizato), or to powdered sugar (icing sugar) to which starch has been added