

هيئة التقييس لدول مجلس التعاون لدول الخليج العربية
STANDARDIZATION ORGANIZATION FOR G.C.C (GSO)

DRAFT

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شراب عالي الفركتوز (٤٢% و ٥٥%)

HIGH FRUCTOSE SYRUP (42% AND 55%)

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HIGH FRUCTOSE SYRUP (42% AND 55%)**1. SCOPE AND FIELD OF APPLICATION**

This standard is concerned with high fructose syrup (42 and 55%) which is used in the food Manufacturing.

2. COMPLEMENTARY AND REFERENCES

- 2.1 GSO 1 “Labelling of Prepackaged Foods”.
- 2.2 GSO 20 “Methods of the Determination of Contaminating Metallic Elements in Foodstuffs”.
- 2.3 GSO 134 “Methods of Test for Sugar Physical and Chemical Methods”.
- 2.4 GSO 148 “Sugar”.
- 2.5 GSO 122 “Methods of Test for Honey Bee”.
- 2.6 GSO 193 “Methods of Test for Wheat Flour”.
- 2.7 GSO 21 “Hygienic Regulations for Food Plants and Their Personnel”.
- 2.8 GSO 168 “Conditions of Storage Facilities for Dry and Canned Foodstuffs”.
- 2.9 GSO 839 “Food Packages – Part 1: General Requirements”.
- 2.10 GSO 312 “Fruits and Vegetable Products – Determination of pH”.
- 2.11 GSO. 409 “Microbiology – Guide for Aerobic Plate Count – Colony Count Technique at 30°C”.
- 2.12 GSO 842 “Microbiology – Guide for Enumeration of Yeast and Molds – Colony Count Technique at 25°C”.
- 2.13 GSO 287 “Microbiology – General Guide for Detection of Salmonella”.
- 2.14 GSO 407 “Microbiology – General Guide for Counting Coliforms – the Most Accountable Method”.

3. DEFINITIONS

High Fructose Syrup: is a product produced from the hydrolysis of starch by enzyme such as amylase or glucoamylase or by acid to form a glucose sugar solution, and then partially Isomerizing the glucose solution to fructose with glucose Isomerase or with alkali solution, to form a mixture solution of fructose and glucose, in which the fructose content should be 42% or 55% as dry basis.

4. REQUIREMENTS

The following requirements shall be met in high fructose syrup:

- 4.1 It shall be produced from raw materials complying with relevant Gulf Standards.
- 4.2 The production shall be comply with manufacturing practice according to Gulf standard mentioned in 2.7.
- 4.3 It shall be free from any foreign flavor and has a sweet taste.
- 4.4 It shall be free from dirt and other extraneous impurities.
- 4.5 It shall be free from insects and their part and rodents excreta.
- 4.6 It shell has a conductivity ash not more than 0.1% m/m.
- 4.7 It shall be free from starch.
- 4.8 The content of fructose, glucose, and other sugars, and total solids should be as follow:

Component	High fructose syrup 42%	High fructose syrup 55%
fructose to total solids	42 – 43%	55 – 57%
glucose to total solids	Not less than 51%	Not less than 38%
Other sugars	8%	6%
total solids	71.5 – 75.5 %	76.5 – 77.5%

- 4.9 It shall has a pH between 3.5 – 5.5
- 4.10 It shall has an optical density below 0.250.
- 4.11 It shall has a turbidity below 0.200.
- 4.12. Total count of bacteria shall not exceed 200 microbe/10g.
- 4.13 Number of yeast and molds shall not exceed 10/10g.
- 4.14 It shall be free from salmonella and coliform bacteria.
- 4.15 Contaminant of elements shall not exceed the following limits:

Arsenic (As): 1 PPM

Copper (Cu): 1 PPM

Lead (Pb) : 0.5 PPM

5. SAMPLING

Samples shall be taken according to Gulf standard mentioned in 2.4.

6. METHODS OF TEST

The following tests shall be carried out on representative sample taken according to item (5) to determine its compliance with all items of this standard.

- 6.1 Determination of moisture in high fructose syrup accordance with Gulf standard mentioned in item 2.3.
- 6.2 Determination of fructose content accordance with Gulf standard mentioned in item 2.5.
- 6.3 Determination of starch accordance with Gulf standard mentioned in item 2.5.
- 6.4 Determination of reducing sugars except fructose and glucose accordance with Gulf standard mentioned in item 2.5.
- 6.5 Determination of contaminating metallic elements accordance with Gulf standard mentioned in item 2.2.
- 6.6 Detection of insects, their parts, and rodents excreta accordance with Gulf standard mentioned in item 2.6.
- 6.7 Determination of conductivity ash accordance with Gulf standard mentioned in item 2.3.
- 6.8 Determination of pH accordance with Gulf standard mentioned in item 2.10.
- 6.9 Determination of optical density accordance with Gulf standard mentioned in item 2.3.
- 6.10 Determination of turbidity accordance with Gulf standard mentioned in item 2.3.
- 6.11 Determination of total count bacteria accordance with Gulf standard mentioned in item 2.11.
- 6.12 Determination of yeast and molds accordance with Gulf standard mentioned in item 2.12.
- 6.13 Detection of salmonella accordance with Gulf standard mentioned in item 2.13.
- 6.14 Detection of coliform bacteria accordance with Gulf standard mentioned in item 2.14.

7. PACKAGING, TRANSPORTATION, AND STORAGE

The following shall be met on packaging, transportation, and storage:

7.1 Packaging

The product shall be packed in clean, hygienic, dry, suitable, impermeable to moisture container, and well sealed, according to Gulf standard mentioned in item 2.9

7.2 Transportation

Transportation of the product shall be carried out in such a way that protects the packaging from mechanical damage and contamination.

7.3 Storage

The packages shall be kept in stores that clean, well-ventilated, and far away from sources of heat, moisture, and contamination, according to Gulf standard mentioned in item 2.8.

8. LABELLING

without prejudice to provisions of Gulf standard mentioned in item 2.1 the following shall be declare on the label.

- the percentage of fructose (42% or 55%).
- starch source (high fructose syrup fromstarch) .

REFERENCES

- Chinese National Standard
CNS 11369-N5215, 11-1985.
- Egyptian Standard No. 1587 - 2005.