

GLUCOSE SYRUP (SWEETENER)

Description : Tapioca glucose syrup is obtained primarily from tapioca starch through hydrolysis process using NON-GMO enzymes. It consists of a concentrated aqueous solution of glucose (~35%), maltose (~35%) and complex carbohydrates (~30%). It has a rich flavour and a composition similar to that of sucrose, but with higher nutritional value.

Characteristics : Tapioca glucose syrup has low viscosity, high resistance to crystallisation, reduced browning capacity, good heat stability and ability to absorb low levels of air moisture. It is less sweet than sucrose (cane sugar) and slightly lower in calories than sugar : 42 calories per serving compared to 50 calories for sugar. It is a healthier and commercially viable alternative to sugar and corn syrup.

Application : Tapioca glucose syrup, depending on their Dextrose Equivalent "DE" levels (how sweetness is measured), will have different functions in foods and beverages. Low-DE syrups are highly viscous, that give them good binding properties (say, in a granola bar or cereal cluster), but they lack considerable sweetness. Meanwhile, high-DE syrups are very sweet, but their reduced viscosity makes them poor binders. The DE level and overall sugar profile of a Tapioca glucose syrup can influence multiple other factors, such as crystal control in ice cream, crunch of a bar, body of a baked good, and thickness of a sauce. Manufacturers will typically consult with syrup suppliers to find a syrup that meets their particular desires. When used in breakfast cereals it can improve its shelf life, enhance colour, reduce breakage and maintain crispness. It can also used to control crystallisation and sweetness in ice creams and candies as well as, providing body and strength to these products.

CAS Number : 8029-43-4

HS Code : 1702.90.99

PHYSICAL AND CHEMICAL DATA

Appearance	Clear liquid		Observe
Dextrose Equivalent (DE)	38 - 44		Osmometer
Brix	78 - 82	%	Moisture Analyzer
Sulphated ash on dry basis	0.5	%	
Colour	Colourless to slightly yellowish		Observe
pH (50% solution)	4.0 - 6.0		pH Meter
SO ₂	< 10	ppm	Titration
Ash	< 0.5	%	Furnace
Iodine Test on Starch	Negative		

Packaging : Food grade plastic drum 200 litres

Food grade IBC Container 1,000 litres

SpaceKraft 1,000 litres

Bulk tank truck up to 25 tonnes

Label Instruction : Product name, manufacturer's details, manufacturing date, expiry date, lot number and net weight.

Shelf Life & Storage Condition : 6-month shelf life. Keep closed packaging in dry and clean area at ambient temperature. Elevated temperatures cause colour to yellowish.

Safety Information : Please see Material Safety Data Sheet (MSDS).

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MICROBIOLOGICAL DATA

Total Plate Count	Max. 500	cfu/g	APHA, 5 th Edition, 2015, Chapter 8
Yeast & Mold	Max. 20	cfu/g	AOAC (2019) 997.02
Coliforms	Absent in 2 x 0.1g		
Clostridium perfringens	Max. 10	cfu/g	APHA, 5 th Edition, 2015, Chapter 33
Bacillus cereus	Max. 10	cfu/g	APHA, 5 th Edition, 2015, Chapter 31
Escherichia coli	Max. 3	MPN/g	APHA, 5 th Edition, 2015, Chapter 9
Salmonella spp.	Absent/25 g.		ISO 6579-1:2017/Amd 1:2020
Enterobacteriaceae	< 10	cfu/g	APHA, 5 th Edition, 2015, Chapter 9

HEAVY METALS

Lead (Pb)	< 0.5	ppm	} In-house Method IN-079-TM based on U.S. FDA, Elemental Analysis Manual, Section 4.7, Version 1.2, February, 2020.
Copper (Cu)	< 0.5	ppm	
Arsenic (As)	< 2	ppm	
Iron (Fe)	< 1	ppm	
Cadmium (Cd)	< 0.1	ppm	

Beside the above-mentioned standards, the product complies with the ThaiFDA for human consumption concerning food processing, food safety, composition, foreign substances and pathogens. An allergen declaration according to directive Food Information Regulation (EC) No.1169/2011 as well as a GMO declaration according to regulation 2003/1830/EC is not necessary.

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