



Galacto-oligosaccharides (GOS) Standard

Product Definition

Galacto-oligosaccharides (GOS) are non-digestible oligosaccharides consisting of 1 to 9 galactose units linked via glycosidic bonds to either terminal glucose or galactose. They are obtained by subjecting a concentrated lactose solution to the action of a β -galactosidase enzyme to produce galacto-oligosaccharides and then further terminating the reaction. The galacto-oligosaccharides may be purified by ultrafiltration, chromatography, ion exchange, electro dialysis, activated carbon filtration or any other safe and suitable process in which all or part of the galacto-oligosaccharides, minerals, other sugars are concentrated into a viscous syrup or a powder.

GOS for human consumption complies with all provisions of the U.S. Federal Food, Drug, and Cosmetic Act.

Composition

Parameter	Units of Measure	GOS Syrup ¹	GOS Powder
		Limits	Limits
GOS composition	%, solids basis	50 minimum	28.5 minimum
Protein	%	0.7 maximum ²	0.7 maximum
Lactose	%	24 maximum ²	30 maximum
Ash (sulphated)	%	0.5 maximum ²	0.5 maximum
Total moisture	%, as-is basis	28 maximum	4.5 maximum

1 - Includes Organic GOS Syrup

2 - On a dry basis

Other Characteristics

Physico-chemical Properties			
Parameter	Units of Measure	GOS Syrup	GOS Powder
		Limits	Limits
pH ³	-	2.8 – 3.8	2.8 – 3.5
Viscosity	cP @ 25°C	1,000 – 5,000	n/a
Color	visual	colorless to light tan/ yellow	white
Flavor	sensory	slightly sweet	

3 - Measured as-is for GOS Syrup; on a 10% solution for GOS Powder

Microbiological Analysis		
Parameter	Units of Measure	Limits
Standard plate count	CFU/g	3,000 maximum
Yeast & mold	CFU/g	100 maximum
<i>Escherichia coli</i>	CFU/g	10 maximum
<i>Enterobacteriaceae</i>	CFU/g	10 maximum
<i>Salmonella</i>	CFU/25g	not detected
<i>Staphylococcus aureus</i>	CFU/g	10 maximum

Permissible Additives

Galacto-oligosaccharides (GOS) may be pH adjusted with appropriate mineral or organic acid or base. Any pH adjustment agent used for this purpose shall be food grade and shall be used in accordance with U.S. current Good Manufacturing Practices and in accordance with its GRAS status, where applicable.

Methods of Analysis

Parameter	Reference Method
GOS composition	AOAC 2001.02
Protein	SMEDP 15.132
Lactose	AOAC 984.15
Ash (sulphated)	USP / NF <281> Residue on Ignition
Dry matter	vacuum oven solids
Standard plate count	AOAC 966.23
All other microbiological tests	FDA BAM

Product Labeling

Recommended identifications: Galacto-oligosaccharides

May be further clarified to describe its physical form (syrup or powder)

Typical Applications

Galacto-oligosaccharides are typically used in infant formulas; in conventional foods like soups, bakery products, cereals, jellies, jams, fruit and vegetable juices; in nutritional and dietary supplements; medical and specialized nutrition; and pharmaceutical applications.

Typical Storage & Shipping

Product should be stored, shipped, and utilized according to the manufacturer's established recommendations. As guidance, product should be stored and shipped in a cool, dry environment with temperature below 80°F and relative humidity below 65%. Stocks should be rotated and utilized in accordance with the manufacturer's established date of expiration or retest.

Typical Packaging

Suitable closed containers are typical.

Revision History

Version	Effective Date	Notes
1.0*	01/23/2019	First officially approved version of this new ingredient standard
2.0	06/26/2023	Migrated this Standard to the new modernized format as authorized by the ADPI Standards Committee. No previously established test parameters or limits were materially altered by this update. Authorization to use additives for pH adjustment was migrated out of the Product Definition section and into the Permissible Additives section that is provided in the modernized format, following the verbiage previously reviewed by the ADPI Standards Committee.

* - Assigned *ex post facto*