STARCH DERIVATIVES

AVN CORPORATION has established itself in the agro-processing sector with high quality maize starch and an array of derivatives. The products have wide application in diverse industries including food, pharmaceutical and feed industry, in the domestic and global markets.

PRODUCT OVERVIEW

1.MALTODEXTRIN (Maize Based)

- Low DE Maltodextrin (12 – 16)
- Standard DE Maltodextrin (16 – 24)
- High DE Maltodextrin (24 – 30)
- Brown Maltodextrin (16 – 24)

2.LIQUID GLUCOSE (CORN SYRUP / GLUCOSE SYRUP)

- Liquid Glucose
- Liquid Glucose So2 Free

3.HIGH MALTOSE CORN SYRUP (HMCS)

4.DEXTROSE MONOHYDRATE (MAIZE BASED)

MALTODEXTRIN (MAIZE BASED)

PRODUCT DESCRIPTION

Maltodextrin is a carbohydrate derived from starch sources like corn, wheat, or potatoes. It is produced through partial hydrolysis, breaking down the starch into shorter chains of glucose molecules. This process results in a white or off-white powder that is neutral in taste and easily digestible. Maltodextrin is widely used in various industries due to its unique properties and versatility.

FEATURES

- Rapidly absorbed by the body and serves as a quick source of energy.
- Does not alter the flavour of food products.
- Can be used as a food additive, thickener, stabilizer, and sweetener.

KEY BENEFITS

- Provides rapid energy.
- Quickly absorbed and utilized by the body.
- Used for thickening, viscosifying, binding, and film-forming in various applications.

FUNCTIONALITY

- Enhances the consistency of sauces, soups, and other liquid products.
- Improves the viscosity and body of food products.
- Acts as a binding agent in pharmaceutical and food products.
- Inhibits crystallization and prevents grainy textures in frozen products.

APPLICATION

Food & Beverage industry

- **Food additive**

Enhances texture, increases shelf life, and improves overall food quality. Commonly used in snacks, baked items, dairy products, and beverages

- **Thickening agent and stabilizer**

Improves fabric feel and appearance, adds weight, and ensures a temporary finish.

- **Sweetener**

Enhances the sweetness of food products, and is often used with other sweeteners in powdered drink mixes, desserts, and low-calorie foods.

- **Sports Nutrition**

Used in sports and energy drinks to provide quick energy for athletes and those engaged in intense physical activities

- **Nutritional Supplements**

Acts as a bulking agent in nutritional supplements and meal replacement products, provides additional calories and carbohydrates

- **Pharmaceutical and Cosmetic Applications**

Used as a filler in capsules and tablets, and as a binding agent, emulsifier, and moisture retainer in cosmetics.

SPECIFICATIONS

Parameters	UOM	Limits
Physical appearance		White to cream colour, fine fluffy powder
Moisture Content	% Max	5.00
DE (Dextrose Equivalent)		Low DE: 12-16, High DE: 24-30, Standard DE: 16-24
Sulphate ash	% Max	0.50
pH		4.5 - 6.5
Solubility	% Max	98
Colour in Solution		Colourless

PACKAGING

25 Kg airtight PP outer bags with LDPE inner liner
25 Kg paper bags with LDPE inner liner

BROWN MALTODEXTRIN - MALCO DX

DESCRIPTION

MALCO DX – Brown Maltodextrin Lactose Substitute Non- Fat Solid is an Enzymatically Modified, Vegan, Gluten-Free, Plant-based, non-GMO starch used as a Texturizing agent, Taste Improver, Bulking Agent, Volumizing, Emulsifier, Fat Replacer, Stabilizer & Thickener and in coffee and chocolate products and cocoa drink. It is 100% naturally made which does not have any preservatives and Mono sodium Glutamate (MSG).

Its brown colour and flavour come from the inherent properties from controlled caramelization during processing, making it a starchy powder with natural colouring used as a carrier, thickener, or filler in food products.

SPECIFICATIONS

SR.NO	PARAMETERS	SPECIFICATION
1	Description	Brown Powder no Irregular Shape No visible impurities by naked eyes
2	Odour	Characteristic odour or slight odour of caramel
3	Taste	Slightly sweetish
4	Moisture Content %	Not more than 6.0
5	Dextrose Equivalent %	16 - 24
6	PH (10% w/v Solution)	4.80 - 7.00
7	Bulk Density, Packed, g/ml	0.32 - 0.40
8	Total Ash %	Not more than 3.0
9	Apparent Starch	Negative

APPLICATIONS

MALCO DX can improve the quality of dairy products by increasing the solubility, dispersibility, taste and flavour. It acts as Texturizing agent, Taste Improver, Bulking Agent, Volumizing, Emulsifier, Fat Replacer, Stabilizer & Thickener and in coffee and chocolate products and cocoa drink.

FEATURES AND BENEFITS

It is highly bio-degradable and causes no harm to the Environment.

MALCO DX provides natural brown colour to application and blends well with other brown colour ingredients or end product.

MALCO DX act as an excellent fat replacer, bulking agent, volumizing and taste improver.

MALCO DX act as thickening & binding agent and as emulsifier and stabilizer.

MALCO DX act as texturizing agent for coffee and chocolate products and cocoa drink.

PACKING

Available in 25 Kgs net weight PP bags with moisture proof line inside.





LIQUID GLUCOSE (CORN SYRUP / GLUCOSE SYRUP)

PRODUCT DESCRIPTION

Liquid Glucose, also known as Corn Syrup or Glucose Syrup, is a purified aqueous solution of nutritive saccharides obtained from starch. It is produced through the enzymatic conversion of starch at high temperatures, resulting in a clear, viscous syrup. Liquid Glucose is commonly used as a thickener, sweetener, and humectant in various food and industrial applications due to its ability to retain moisture and prevent crystallization.

FEATURES

- **Viscosity and sweetness**

The syrup's viscosity and sweetness vary based on the degree of hydrolysis, measured as Dextrose Equivalent (DE)

- **Moisture retention**

Helps maintain the freshness and moisture content of food products.

- **Crystallization prevention**

Slows down the crystallization process, making it ideal for use in candies, jams, and jellies.

- **Neutral flavour**

Does not alter the taste of the final product.

KEY BENEFITS

- **Humectant properties**

Keeps food moist and maintains freshness.

- **Versatility**

Suitable for a wide range of food, pharmaceutical, and industrial applications.

- **Consistency**

Provides consistent quality and performance in various formulations.

APPLICATIONS

Food industry

- **Confectionery**

Used to prevent crystallization in jams, jellies, and hard candies. Also used in chewing gums and ice cream for a smoother texture

- **Bakery**

Enhances the texture and stability of pies, cream fillings, éclairs, and candies.

- **Beverages**

Acts as a sweetener and thickener in various drink formulations.

- **Dairy**

Used in the preparation of ice cream and other dairy products to prevent sucrose crystallization

Pharmaceutical Industry

Serves as a base for liquid formulations like tonics, elixirs, and cough syrups due to its moderate sweetness and stability.

Tobacco Industry

Used to flavour and maintain the texture of chewing tobacco and cigarettes.

Tanning Industry

Adds pliability and weight to leather in the chrome tanning process.

SPECIFICATIONS LIQUID GLUCOSE

Parameters	UOM	Limits
Description		Yellow tinge to colourless, clear, thick viscous syrup
Dry solids % at 20°C	%	82-85
Sulphated ash (on dry basis)	% Max	0.5
Dextrose Equivalent (DE) (on dry basis)	%	40.0 - 44.0
pH (50% solution, w/v)		4.80 - 5.50
Sulphur dioxide (ppm)		400 (Confectionery), 40 Max (Pharma)
Acidity (ml of 0.1N NaOH/5g)	ml Max	0.6
Starch		Absent (No blue colour with Iodine solution)
Total plate count (c.f.u/gm)		Max 1000/gm
E. coli / Salmonella		Absent
Yeast / Moulds		< 50

SPECIFICATIONS LIQUID GLUCOSE SO2 FREE

Sr. No.	Parameters	Specifications
1	Appearance	Syrupy Liquid
2	Colour	Clear colourless to yellowish tinge
3	Odour	Characteristic of corn
4	Taste	Slightly sweet
5	Brix (Dry solids) %	84.00 – 86.00
6	Dextrose Equivalent (% on DB)	40.0 – 44.0
7	Sulphated Ash %	0.30 Max
8	pH (50% solution w/v)	4.80 – 5.50
9	Sulphur Dioxide, ppm	40.0 Max
10	Acidity (ml of 0.1N NaOH / 5 gms)	0.60 ml Max
11	Starch Test	Negative

PACKING

Available in HDPE Barrels: 300 Kg.





HIGH MALTOSE CORN SYRUP (HMCS)

PRODUCT DESCRIPTION

High Maltose Corn Syrup (HMCS) is derived from the enzymatic hydrolysis of corn starch. This process involves the use of dual enzymes for liquification and saccharification under controlled conditions, resulting in a syrup with high maltose content and minimal glucose and other sugars. HMCS is a food additive that's used as a sweetener and preservative primarily in the confectionery industry

FEATURES

- **High maltose content**

Contains at least 50% maltose, with some varieties containing up to 70%.

- **Moderate sweetness**

Less sweet than high-fructose corn syrup, making it suitable for various food applications.

- **Versatile**

Used in a wide range of food products including candies, baked goods, and beverages.

APPLICATIONS

Confectionery industry

- Hard Boiled candies: Enhances texture and stability
- Icing candies: Provides sweetness and smooth texture.
- General confectionery manufacturing: Acts as a sweetener.

Baking industry

- Bread and cake**:** Improves texture and shelf life.

Beverages

- Beer brewing: Adds fermentable sugars and improves flavour.
- Soft drinks and beverage: Used as a sweetener and preservative.

Food industry

- Frozen foods: Enhances sweetness and prevents crystallization.
- Seasonings and sauces: Improves texture and consistency.

PACKING

- Available in HDPE Barrels: 300 Kg.

SPECIFICATIONS

Parameters	Standard
Description	Clear, colourless to pale yellowish, odourless, viscous syrup with characteristic sweet taste.
Dry Solids %	74.0 - 82.0
Dextrose Equivalent (% on DB)	42 - 46 (HMCS-45)
	50 - 55
Maltose content (% on DB)	45 - 50 (HMCS-45)
	52 Min.
Fermentable Sugars (% on DB)	75 Min.
pH (50 % solution w/V)	4.80 - 5.50
Sulphur Dioxide Content:(ppm) Confectionery Grade	400 Max.
SO2 Free Grade	40 Max.
Sulphated Ash (% on DB)	0.50 Max.
Presence of Starch	Absent
Microbiological Analysis	
Total Plate count	1000 cfu/gm (Max.)
Yeasts & Moulds / Total Moulds / Fungi	100 cfu/gm (Max.)
E. Coli / Salmonella per gm	Absent





DEXTROSE MONOHYDRATE (MAIZE BASED)

Dextrose Monohydrate is moderate in sweetness. It is 65-70% as sweet as sucrose and has a solution, which is much less viscous than Liquid Glucose. DMH is freely soluble in water at room temperature and also in boiling alcohol.

The perceived sweetness can be increased to the level of sucrose in some Dextrose/Sucrose blends. Dextrose has a greater depression of freezing point than that of cane sugar, resulting in a smoother and creamier texture of the final product like in frozen food products. The bulk density of DMH is 0.65 to 0.70 kg/cc.

FEATURES

- **High Purity**

Dextrose Monohydrate Powder is of high purity, ensuring quality and safety for various applications.

- **Excellent Solubility**

It dissolves quickly in water, making it easy to use in formulations.

- **Energy Source**

Provides a quick source of energy, suitable for nutritional and sports products.

- **Sweet Taste**

Offers a pleasant sweetness, enhancing the flavour of food and beverages.

- **Stable Shelf-Life**

It has a stable shelf-life, ensuring long-term usability and effectiveness.

APPLICATIONS

- Bakery & Snacks
  - Sweet biscuit & cookie
  - Bread
  - Cake and pastry
  - Filling, custard, décor
  - Breakfast cereal
  - Cereal bar
  - Salty snacks
- Beverages
  - Powdered beverage
- Dairy
  - Ice cream
- Confectionery
  - Chewy sweet & marshmallow
  - Wine gum & jelly
  - Compressed tablet
- Savory
  - Soup
  - Sauce
  - Seasoning
- Specialized nutrition
  - Sports nutrition & Weight management
  - Senior & Clinical nutrition
  - Nutraceutical & Functional food
- Confectionery

SPECIFICATIONS

Sr. No.	Parameters	Standards Parameters
1	Description	White to cream white, Crystalline powder
2	Odor	Characteristic sweet
3	Moisture %	7.5 – 9.5 %
4	Dry Substance %	90.5 – 92.5 %
5	Ash, Sulphated %	0.1 %
6	Dextrose %	99.5 – 100.5 %
7	Other high Saccharides %	0.5 %
8	% minimum through #16 Mesh	99
9	% minimum through #100 Mesh	60
10	Weight / Volume Factors	
	g/ml	0.67
	ML / 10 gm	150

PACKING

Available in 50 & 25 Kgs net weight PP bags with moisture proof line inside