



**SUNAR
MISIR**



**Your
Global Partner
for Ingredient
Solutions**

SUNAR Investment founded in 1974 has a distinctive position in agro-industrial sector with its competitive infrastructure. As being one of Türkiye's leading industrial group, SUNAR Investment operates in 6 different agriculture based sectors. Group companies are the pioneer in their respective sectors that include starch and starch derivatives, edible oil, flour, animal feed, fresh and dried fruits, and thermoplastic starch and bio-polymers. Sunar Özlem offers specialized flours and animal feeds for diversified needs of the market thanks to its experienced staff. Sunar Mısır succeeded many innovations, produces starch and starch derivatives. NÇS started its operation in 2006, transforms agriculture into engineering to harvest high yield certified fresh fruits and market dried fruits as well. Elita Gıda has one of the "fully integrated" edible oil production plant in Türkiye with its high technology infrastructure. In addition to manufacturing SUNAR Investment also has an international trade business unit under the name of Sunar Pazarlama. In 2014, Sunar NP was founded to produce Türkiye's first certified thermoplastic starch and bio-polymers. Sunar Agro SRL, the youngest company of the group, was established in Constanta, Romania, for the coordination of the East European agricultural trade activities of the SUNAR Investment.



Sunar Mısır has started its operations in 1985. Staying one step ahead throughout its journey, the company has become the driving force of Turkish starch and starch derivatives industry.

The product portfolio of the company has been extended regularly. Sunar Mısır now offers a wide range of products for food, textile, paper, chemical, pharmaceutical-personal care industries and specialized industrial application areas.

Leading corn based ingredient manufacturer Sunar Mısır produces **glucose syrup and glucose-fructose syrup, native corn starch, modified starches, dextrins, sorbitol, sorbitol powder, maltitol, powder sodium gluconate, liquid sodium gluconate, corn gluten feed, corn gluten meal and corn germ** with high quality and international standards. Sunar Mısır is the leading Sorbitol and Maltitol manufacturer in Türkiye.

Providing innovative and customized solutions, Sunar Mısır supports its clients around the world with optimizing product formulation and with adding value to their business as part of corporate strategy.

SUNAR; has non-GMO production on the basis of IP System Certificate,
 has a big share in Türkiye's corn oil, starch and glucose export,
 has one of the "fully integrated" edible oil production plants in Türkiye,
 has been a strong player in Turkish starch based ingredients markets,
 has Türkiye's first sorbitol and maltitol manufacturing plant.

Awards and recognition



FAO Medal



EBA



European Business Awards Ones to Watch List (Elita Gıda / Growth Strategy 2017-2018)



European Business Awards National Champion Ruban D'Honneur (Growth Strategy / Elita Gıda Sustainability Social Responsibility / Sunar Mısır)



International Business Awards Stevie Awards Chemical Company of the Year (Sunar NP)



International Business Awards Stevie Awards Achievement in Product Innovation (Sunar NP)



International Taste & Quality Institute Superior Taste Awards



Product Portfolio

Polyols

Sorbitol
Maltitol
Sorbitol Powder

Glucose & Glucose-Fructose Syrup

Glucose Syrup
Glucose-Fructose Syrup
Oligodex Low DE Glucose Syrup

Maltodextrin Syrups

Starches & Derivatives

Native Corn Starches
Food Grade Modified Starches
Modified Industrial Starches
Dextrin

Sodium Gluconate





Sorbitol Syrup

Sunsorb 70/70 (NC Grade Sorbitol Syrup)
 Sunsorb C+92 / C+98 (C Grade Sorbitol Syrup)



D-Sorbitol or D-Glucitol, is a hexahydric polyol. Sorbitol is manufactured by the catalytic hydrogenation of starch hydrolysate. Sorbitol is sugar-free, low-caloric, non-toxic, non-irritant, stable and chemically inert, resistant to alkaline and mostly not fermentable by microorganisms. It doesn't undergo Maillard reaction.

Sunsorb Sorbitol Syrup is a clear, colourless, syrupy liquid, miscible with water.

Characteristics

- Low-calorie, non-cariogenic and low-glycemic index natural sweetener
- Retains moisture as a humectant
- Acts as a texturizing agent
- Non-cariogenic
- An effective stabilizer for food
- Acts as a plasticiser
- Provides cooling effect in mouth
- Acts as a bulking agent
- Improves viscosity in the end product
- Has high temperature and pH stability
- Shows excellent performance in bakery products
- Meets the requirements of USP/EP/BP

Packaging Type: Plastic Barrel, Metal Barrel, Bulk, Tin, IBC Tank, Flexi Tank
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
70/70		
Water Content %	29	30.5
D-Sorbitol % (on DB)	72	92
Reducing Sugar % (on DB)	-	0.3
C+92		
Water Content %	28	30
D-Sorbitol % (on DB)	91	97
Reducing Sugar % (on DB)	-	0.2
C+98		
Water Content %	28	30
D-Sorbitol % (on DB)	97	100
Reducing Sugar % (on DB)	-	0.2



Food Application

Confectionery: Sunorb Sorbitol provides freshness, improves shelf life and imparts pleasant cooling taste. Sorbitol is tooth friendly. Toffee, soft/hard caramels, jellies, milk chocolate, fruit jams remain dry and uncrystallized with a good mouthfeel by sorbitol.

Bakery Products: Prevents bakery products, especially cakes from drying out by its humectant properties. It improves the taste and rancidity thus extends shelf life.

Diabetic jams: Improves appearance of fruits, reduces discoloration, enhances sweetness of finished products and prevents crystallization.

Ice Creams: Lowers freezing point by making softer and easier for scooping. It also inhibits recrystallization.

Pharmaceutical Application

Personal Care & Cosmetics: Sorbitol has many uses in consumer products due to its superior ability to retain moisture in personal care & cosmetics. Sorbitol also provides clarity and translucency to bar soaps.

Sorbitol acts as a humectant, thickener, stabiliser and plasticiser in personal care products by drawing water from the environment to the surface of the skin. Sorbitol ensures uniformity of application of creams and prevents "rolling".

Reduces the grasing after effect, increases the adherence of make-up, acts as a binder and an emollient and improves lubricity with its non-irritating characteristic. It is non toxic and leaves an agreeable coolness on the skin. It is a useful component of beauty creams, shampoos, shaving creams, lotions, soaps etc.

Toothpaste: Use of Sorbitol prevents drying, gives good consistency, plasticity and enhances cooling effect.

Industrial Application

Sorbitol is used to produce Sorbitol Esters, Polyether Polyols for Rigid Polyurethane Foams, Alkyd Resins, Melamine & Phenolic Resins, Enzymes and Chemical Mixes.

Animal Nutrition: Sorbitol is used in premixes, starter feeds and some nutritional supplements prepared for animal nutrition.

Continuous Liquid Coolants: In Mechanical & Motor Industry, adding of Sorbitol to antifreeze enhances the efficiency of some corrosion inhibitors with respect to common metals.

Concrete & Mortar: Sorbitol is a good set retardant. In premixes Sorbitol retards the setting time and reduces the volume of water to be used.

Leather: Sorbitol being non-volatile is retained in the leather, maintaining its flexibility and enhancing both the intensity and luster of the colour.

Papers: Sorbitol increases the flexibility of paper and reduces the tendency of paper to curl and increases the folding value of paper.

Shoe Dressing and Cream Polishes: Sorbitol acts as a plasticiser so it helps to preserve the plasticity and smoothness and prevents them from being abrasive.

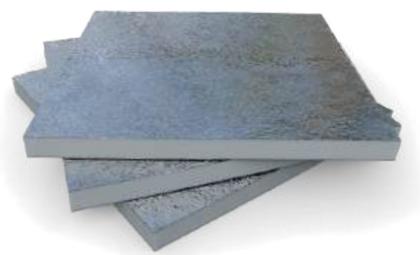
Textiles: Sorbitol is usually used as enzyme stabilizer, penetrating agent, dispensing agent, humectant/bodying agent and sequestering agent. It is used as a color stabilizer in textile printing, as a humectant in textile sizing and as a softener in finishing.

Tobacco: Sorbitol is used to contribute to the flavour of tobacco and used as humectant and conditioner. Tobacco processed with sorbitol gives mild aromatic fumes when smoked and does not develop acrolein, which may be the case when glycerin is used as humectants. Sorbitol treated Tobacco retains its cool, sweet smoking properties during storage and prevents cigarettes from drying out.

Aluminum Etching: Sorbitol is an important raw material in etching chemical production for aluminum surface treatment.

Sorbitan Stearates: Sorbitol is the main raw material for the sorbitan stearates and sorbitan palmitate production. Sorbitan stearates can be used as emulgator in food and cosmetic applications. Sorbitan Palmitate is a surfactant and emulsifier made from palm oil and sorbitol.

Enzyme (Freeze Dried and Solutions): Sunorb Sorbitol acts as a stabilizing agent.





Sunar Mısır is the first & only sorbitol powder producer in Türkiye!

Being a leading corn based ingredient solutions partner with an export sales for more than 100 countries in the world, Sunar Mısır is now expanding its product portfolio with sorbitol powder **Sunsorb®**.

Sunsorb® Sorbitol Powder is a perfect solution to satisfy leading consumer trends of improved well-being due to its sugar free natural sweetness & low glycemic index.



Characteristics

- Low-calorie natural sweetener
- Retains moisture as a humectant
- An effective stabilizer for food
- Texturizing agent
- Cooling effect in mouth
- Low glycemic index
- Acts as a filler and binder
- Excellent performance in chewing gum and tablets
- Non cariogenic
- Meets the requirements of USP/EP/BP

Packaging Type: Paper Sack

Shelf-Life: 24 months

Physical and Chemical Properties	Min	Max
Water Content %	-	1.5
D-Sorbitol % (on DB)	97	-
Reducing Sugar % (on DB)	-	0.2
Melting Point °C	95	98



Paper Sack



sunsorb POWDER

Food Application

Chewing gum:

- Adds feeling of freshness.
- Creates the desired texture and structure.
- Provides the moisture balance of the gum.
- Non-cariogenic.
- Gives cool sweetness.
- Acts as a low-calorie sweetener.

Sugars: Provides freshness, extends shelf life and gives a pleasant cooling taste.

Ice Creams: Lowers the freezing point, makes spooning softer and easier.

Biscuit and Bakery Works: Extends the shelf life of the product.



Pharmaceutical Application

Used in chewable tablets, effervescent tablets, swallowable tablets

- Provides key functional properties of a filler and filler/binder as well as a bulk sweetener.
- Offers excellent tableting properties.
- Developed with respect to particle size distribution, flow properties for direct compression applications.
- Ensures non-reactivity and compatibility with active ingredients.
- Suitable for use in formulations addressing pediatric and diabetic patient populations.
- Provides pleasant sweetness with a smooth mouthfeel.

Industrial Application

It is an important raw material in the production of anodizing chemicals for aluminum surface treatment.

Used as a plasticizer in polyurethane foam, isosorbide production, coating/film formation applications, used as a set retarder in the construction industry, enzyme stabilizer, alkyd resin production.



formation applications, used as a set retarder in the construction industry, enzyme stabilizer, alkyd resin production.



Maltitol Syrup

Maltitaste 75/55

Maltitaste 80/55

Maltitaste 85/55

Maltitaste 75/75

Maltitaste 85/75



Maltitol is a non-toxic, non-irritant, stable and chemically inert polyol and it's resistant to heat, mostly non-fermentable by microorganisms.

Maltitol is manufactured by the catalytic hydrogenation of starch hydrolysate. It is one-by-one sucrose substitute with low-calorie and low-glycemic index.

It does not promote tooth decay and it has lesser effect on blood glucose. It doesn't undergo Maillard reaction. Maltitol provides a variety of functional properties.

Maltitaste Maltitol syrup is a clear, colourless, syrupy liquid, miscible with water.

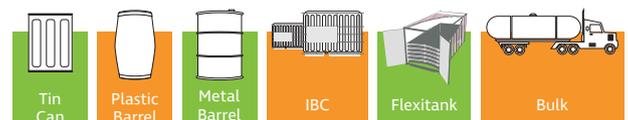
Characteristics

- Low-calorie natural sweetener
- Low glycemic index
- One-by-one sucrose substitute
- Low fermentability
- Excellent heat stability
- Provides texture, viscosity, crystallization control
- Does not promote tooth decay (non-cariogenic)
- Meets the requirements of USP/EP/BP Pharmacopoeia

Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk.

Shelf-Life: 24 months

Maltitaste	75/55		80/55		85/55		75/75		85/75	
	min	max	min	max	min	max	min	max	min	max
Water Content %	24	25.6	19	22	14.5	15.5	24.5	25.5	16.3	17.7
D-Maltitol % (on DB)	55	-	55	-	55	-	72	76	71	74
Reducing Sugar % (on DB)	-	0.2	-	0.2	-	0.2	-	0.2	-	0.2



Food Application

Hard Candies: The most important reasons for choosing maltitol syrup in sugar-free candies are; maltitol is highly sweet compared to other sweeteners and has a very good flavoring ability.

Protein Bars/Cereal Bars: Maltitol is used in sugar reduced formulations; reduces calorie content, is ideal for dietary ingredients. It provides moisture control and stability, preserves chewiness.

Bakery Products: Maltitol syrup is preferred because of its excellent heat stability and sweetening power in biscuits, cookies.

Marshmallows: Prevents drying of the foam structure, prevents crystallization and hardening.

Ice Cream: The stiffness and melt strength of maltitol containing ice creams is ideal for texture properties.

Chewing Gum: Provides humectancy and sweetness for sugar-free chewing gums.

Maltitaste Maltitol Syrup is also used for dietary products, wafer, halvah, jam, jam filling, dairy dessert, cream filling, dried fruit, dried layers of fruit pulp and churchkhela.



Pharmaceutical Application

Maltitaste Maltitol syrup is used in losenge, pharmaceutical syrups and suspensions because of its low glycemic index and humectant character.





Maltose Syrup SM 40 / SM 45D

SM 40 and SM 45D is used for making hard candies, toffee, jam, jellies, ice cream, marshmallow, confectionery, dressings, beverages, breakfast cereals, nutritional bars.



Characteristics

- Has a clear and viscous texture with lightly sweetened taste
- Provides microbial durability due to high osmotic pressure
- Provides crystallisation control in applications
- Controls viscosity, humidity, sweetness and color enhancement
- Provides desired stability of finished products
- Provides transparency and brightness in final products

Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
SM 40		
Brix (20° C)	82.5	84
DE %	38	48
SM 45D		
Brix (20° C)	82.3	83.4
DE %	46	52





High Maltose Syrup SM 50 / SM 55

SM 50, SM 55 is used for making hard candies, toffee, jam, jellies, ice cream, caramel, confectionery, nougat, fondant, marshmallow, and sauces.



Characteristics

- Provides texture, viscosity, glossiness
- A clear and colorless syrup with lightly sweetened taste
- Has low moisture absorption and high moisture retention
- Moderates sweetness
- Provides crystallization control and consistency

Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
SM 50		
Brix (20° C)	82.5	84
DE %	40	48
SM 55		
Brix (20° C)	81	83
DE %	40	45





Glucose Syrup SCG 38 / SCG 40

SCG 38 and SCG 40 are used for making cakes, hard candies, confectionery, toffee, jellies, ice cream, fondant, chewing gum, nougat, bakery products, biscuits, caramel, Turkish delight, halvah, jam fillings, marshmallow, breakfast cereals, snacks.

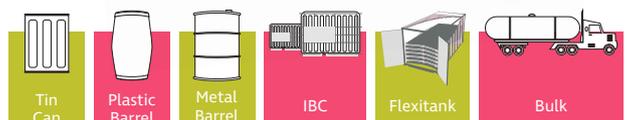
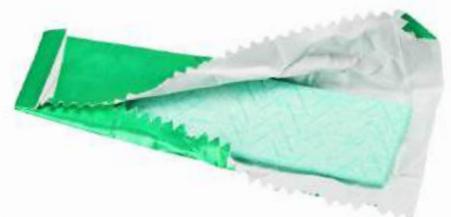


Characteristics

- Provides glossiness
- Has low to moderate sweetness
- Provides desired stability of finished products
- Increases chewiness by decreasing the hardness of the products
- Preserves the shape of the products during cutting, packaging and storing processes
- Provides high transparency and brightness in final product

Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
SCG 38		
Brix (20° C)	82	84
DE %	35	38
SCG 40		
Brix (20° C)	82	84
DE %	38	44





Glucose Syrup

SCG 60

SCG 60 is used for making cakes, confectionery, jam, ice cream, bakery products, biscuits, halvah, marshmallow, and ketchup.



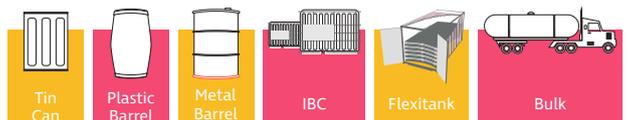
Characteristics

- Provides glossiness
- Provides desired stability of the finished products
- Preserves the shape for further processing
- Provides transparency and brightness in final product

Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:

	Min	Max
SCG 60		
Brix (20° C)	80.5	83
DE %	57	64





Glucose-Fructose Syrup

SBF 10

SBF 10 Glucose-Fructose Syrup is used in sherbet of baklava which is a dough based dessert.



Characteristics

- Provides desired stability of the finished products
- Prevents sugar crystallisation in baklava
- Increases brightness in final products
- Prolongs the shelf life
- Provides easy application
- Provides crispy and crunchy texture



Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
Brix (20° C)	78	80
Fructose % (on DB)	8	13



Glucose - Fructose Syrup SRF 30

SRF 30 Glucose-Fructose Syrup is used in making jam, halvah, Turkish delight, confectionery, ice cream, jellies, bakery products, marmelade.

Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
Brix (20° C)	78	81
Fructose % (on DB)	21	25



Characteristics

- Has a clear, colorless texture
- Provides desired stability of the finished products
- Increases brightness in final products
- Improves texture

Glucose-Fructose Syrup SMF 42

SMF 42 Glucose-Fructose Syrup is used in making fruit juices, soft drinks, biscuits, bakery products, cakes, caramel, sauce, ketchup, hookah, and tobacco.

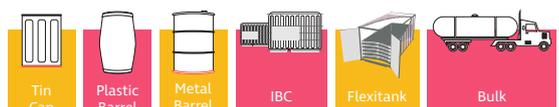


Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
Brix (20° C)	69	71
Fructose % (on DB)	40	45

Characteristics

- Has a clear and colorless texture
- Increases brightness in final product
- Prevents microbiological activity
- Prolongs shelf life
- Has a non-masking effect
- Improves mouth-feel and sweetness, helps to achieve varying levels of caramelized color





oligodex



Maltodextrin Syrup
Oligodex 18 / Oligodex 18L

OLIGODEX-18® shows application-specific superior properties in almost every application where glucose syrups and sugar are used.

It has low Maillard reactivity and is resistant to heat and acidic conditions. Its relative sweetness is 25% versus sucrose in 10% solution.

It provides same caloric value like other carbohydrates but gives less osmotic pressure after ingestion.

It offers new functions and its benefits have been tested and proven in food products.

OLIGODEX-18®, which is considered to be a partially undigested and absorbed substrate in the small intestine, has a prebiotic effect by selectively encouraging the growth of useful bacteria and/or the activity when it reaches the colon.

It has the ability to improve intestinal flora.





Functional Properties

- It is a bulking agent, provides texture optimization and stability.
- Prevents crystallization.
- Has neutral taste, does not mask other tastes with its low sweetness feature.
- Due to its neutral taste, it helps sugar and aromas to come to the fore.
- Has low moisture absorption.
- Suitable for spray drying process.
- Suitable for soft candies and jellies.
- Has the effect of lowering the freezing point of frozen desserts / ice cream.



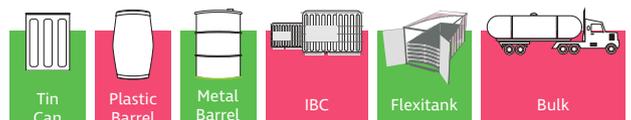
Applications

- Bakery products
- Caramels, candies, and jelly like confectionery products
- Coffee creams
- Frozen desserts
- Ice cream
- Jelly
- Bars



Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
Oligodex-18		
Brix (20° C)	75	78
DE %	-	20
Oligodex-18L		
Brix (20° C)	68	72
DE %	-	20





oligodex

Glucose Syrup Oligodex 21 / Oligodex 24 / Oligodex 28

OLIGODEX® shows specific and superior properties in almost every application where glucose syrup and sugar are used.

Oligodex 21-24-28 products are low DE liquid glucose syrups. SUNAR has designed an innovative product called **Oligodex**®.

The product contains,

- Unique and controlled carbohydrate spectrum.
- Low levels of mono and disaccharides. (below %10)
- High levels of oligosaccharides that accumulate about moderated polymerization degree (Dp).



• This carbohydrate spectrum allows more comfortable control of overall sweetness, superior texture and browning control in cake formulations.

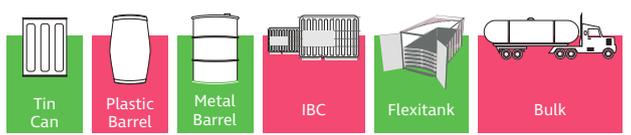
It has the ability to improve intestinal flora.

Nutritional and Sweetness Properties

- Oligodex has low Maillard reactivity, high temperature and acid stability.
- Relative sweetness is %25 against sucrose in a %10 solution.
- Like other carbohydrates, it provides 4 kcal/g. However it gives less osmotic pressure after ingestion.
- Oligodex offers new functions and its benefits have been tested in food products.

Packaging Type: Tin Can, Plastic Barrel, Metal Barrel, IBC, Flexitank, Bulk
Shelf-Life: 24 months

Physical and Chemical Properties:	Min	Max
Oligodex-21		
Brix (20° C)	75	78
DE %	20	22
Oligodex-24		
Brix (20° C)	77	80
DE %	22	24
Oligodex-28		
Brix (20° C)	76	81
DE %	25	30



oligodex

Functional Properties

- Bulking agent, texture/mouth feeling optimization.
- Anti-crystallization agent.
- Emphasizes the taste of sugar and aroma due to its neutral taste.
- Texture stability.
- Gelatine replacer for jelly applications.
- Good workability.
- Low Maillard reactivity.
- Suitable for spray drying applications.
- Suitable for soft candy applications.
- Gives lower freezing point in frozen desserts and ice creams.
- High color stability.



What provides Oligodex?

- **Oligodex®** is an ideal source of energy in sport nutrition and sport drinks as well as in clinical nutrition with its low sweetness and low osmotic pressure.
- It can be used in cakes to modulate the sugar spectrum and support the soft texture.
- It can also affect the tissue positively with allowing the reduction in hydrocolloids.
- In spray drying, with low DE, low levels of DP1 and DP2, **Oligodex®** is enable for spray drying at high dry matter values and increases efficiency.





Industrial Grade Native Corn Starch

Native corn starch is obtained from corn wet-milling process. Due to its adhesive properties, can be used in glue recipes in the production of corrugated board and fabrics. Also can be used for printing in textile and paper industry. Native corn starch is used in dressing and sizing, in the production of construction materials and a variety of means for economic use.

Characteristics

- Used as a filler and binder
- Being a viscosity modifier
- Used as a surface sizing agent
- Water absorber
- Improve film forming ability

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties	Min	Max
Moisture %	10	13
Ash %	-	0.3
pH	5	7
SO ₂ (ppm)	-	10
Protein %	-	0.5



Applications

- Enhance adhesiveness properties of adhesive
- Can be use in diaper production as a water retaining
- Improve good film ability in sizing application and strength of fiber
- Decrease dusting during the weaving
- Can bu use as a filler in polymer industry
- Provide high energy density, improve pressability and decrease the burn time/ combustion duration in coal mining



- Use for produce casting mould as a adhesive and binder
- Prevent drilling-fluid losses as a viscosity modifier in oil-field applications
- Excellent binder and used in the manufacture of charcoal briquettes, ceramics, sand molds, gypsum board, crayons, and chalk
- Decrease the hazardous air pollutant realeased during the firing of ceramic in contrast to bitumen, pitch, lignin sulphate





Food Grade Native Corn Starch

Sunar Misir Native Starch is based on corn. It has specific protein content, moisture content, pH, and viscosity values. It is odorless and tasteless that can be used in any recipes without any effect on final taste or odor of the products.

Characteristics

- Used as a thickener and binder
- Texturizing agent
- Filling agent
- Spreading agent
- Stabilizer of product standard quality

Applications

Bakery, pastry and savory products

- Improve the texture
- Increase the crispness

- Improve dispersion in the mouth
- Provide easy spread of the dough and prevent tearing

Dairy products

- Prevent cracking on creamy textured products
- Improve shine look of the products
- Retain product standard quality

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties	Min	Max
Moisture %	-	13
Ash %	-	0.3
pH	5	7
SO ₂ (ppm)	-	10
Protein %	-	0.5
Klor	-	0.034
Viscosity (cP)	900	1100
Above 150 micron sieve %	-	1.0





Baklava Starch



Characteristics

- Due to the perfect dusting behavior, Sunar Baklava Starch spreads homogeneously over phyllo dough
- Sunar Baklava Starch stabilizes the humidity level of phyllo dough and prevents it from tearing
- Crispy feeling for every piece of baklava is the same after cooking, thanks to the uniform spread of Sunar Baklava Starch

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

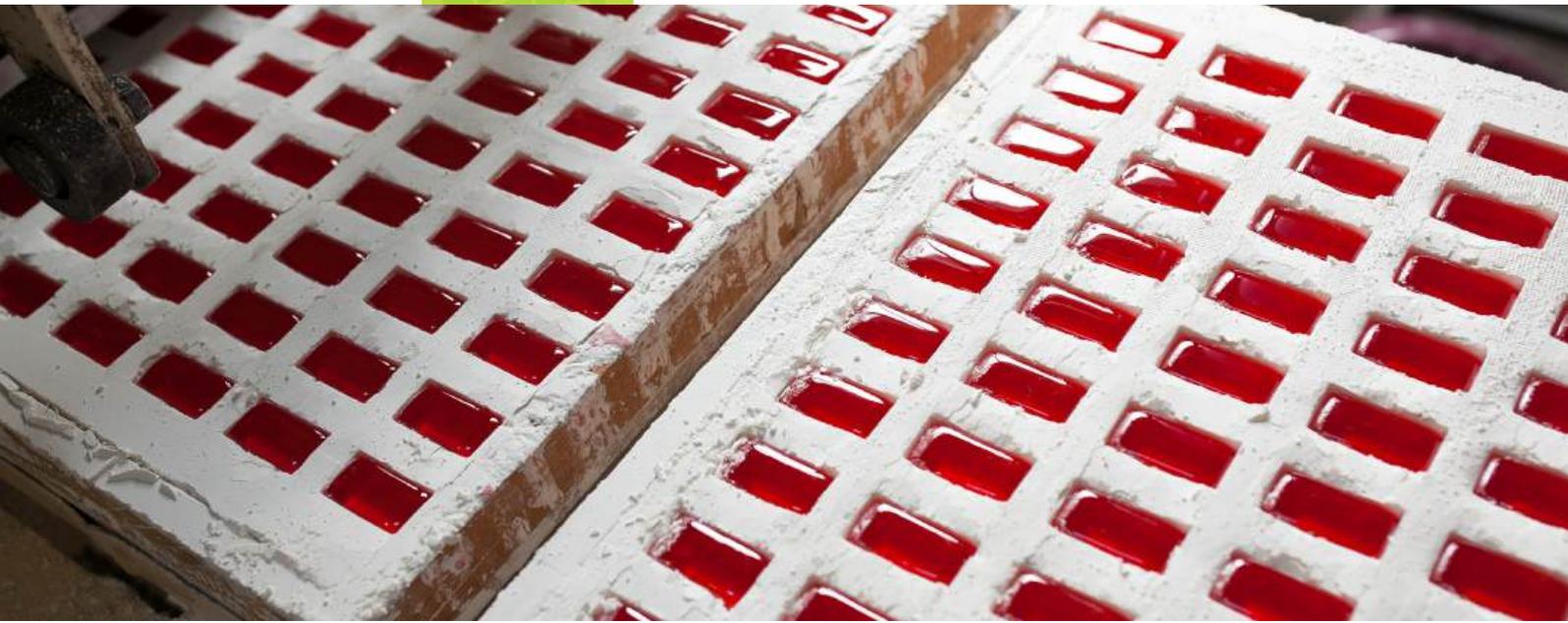
Physical and Chemical Properties

	Min	Max
pH	5	7
Moisture %	-	13



Paper Sack

Big Bag



Moulding Starch

SM-M 003/ SM-M 006/ SM-M 009/ SM-M 003VO/ SM-M 006VO/ SM-M 009VO

SM-M moulding starches are mould forming feature improved starches. The moulding starch is used in the moulding, depositing and drying processes of soft jelly candies specially to absorb moisture from the candy during drying.

Characteristics

- Having high mould forming feature
- Having different grade of compressibility
- Allow the product to be ready quickly
- Absorbing the moisture thanks to its low moisture content
- Having no taste and smell
- There is no tendency to give taste and odor to the product obtained
- Alternative vegetable oil based products are available instead of the mineral oil contained product



Applications

Soft Jelly Candies

- Used as a mould
- Shape the jelly candies
- Allow the product to be ready quickly
- Removable easily after drying step

Jelly

Packaging Type: Paper Sack, Big Bag
Shelf-Life: 24 months

Moulding Starch	SM-M 003		SM-M 006		SM-M 009		SM-M 003VO		SM-M 006VO		SM-M 009VO	
	min	max	min	max	min	max	min	max	min	max	min	max
Moisture %	8.5	10.5	-	13	10	13	10	13	10	13	10	13
10% HCl Acid Insoluble Ash	-	0.1	-	0.1	-	0.1	-	0.1	-	0.1	-	0.1
pH	5	7	5	7	5	7	5	7	5	7	5	7
SO2 (ppm)	-	10	-	10	-	10	-	10	-	10	-	10
Protein %	-	0.5	-	0.45	-	0.45	-	0.5	-	0.5	-	0.45



Thin Boiling Starch

SMT GUM 0515/SMTGUM 70100

SMT GUM thin-boiling starches are partially hydrolyzed and having a wide range of viscosity starches. Thin boiling starch has also low and consistent viscosity. Thanks to that properties improve sensory experiences and widely used in soft candies, chewing gums and jellies as plant based alternative to gelatin.

SMT Gum is used as a thickener with excellent transparency, elasticity moreover; the structure can tolerate the changing in process conditions or prescriptions such as temperature, pH or mechanical stress etc. SMT Gum has several advantages; cheap, renewable, non-toxic and readily available raw material.



Characteristics

- Used as a thickener
- Improve gelling structure- give smoothness
- Supply soft and low viscous gel
- Give hardness and opacity without affecting elasticity and brittleness
- Improve mouthfeel
- Due to its viscosity, can be used high amount in the recipes
- Resistant to process conditions
- Wide operation pH, temperature and shear ranges

Application areas

Confectionery:

- Plant based gelatin alternative as a thickener
- Supplying elasticity
- Giving acceptable hardness

Soft gum & jelly; chewy sweet & marshmallow and their fillings and coatings

Dairy:

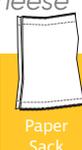
- Plant based binder and texturize
- Giving texture thanks to its *gelling property*

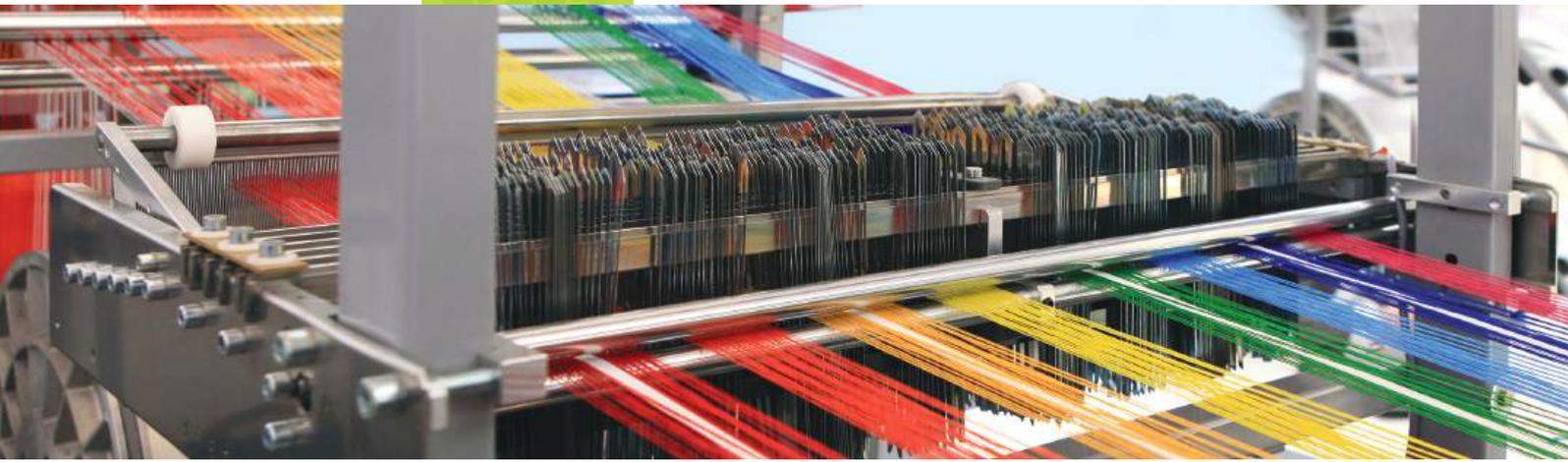
Plant based cheese and traditional cheese

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

SMT GUM	70100		0515	
	min	max	min	max
Moisture %	10	13	10	13
Protein %	-	0.4	-	0.4
pH	5	7	5	7
Viscosity (cP)	70	100	5	15





Thin Boiling Starch

SMT2216/ SMT2226/ SMT2236/ SMT2246/ SMT2260

Thin boiling starch obtain from acid hydrolisis of natural corn starch. During the reaction starch moleculer chain break down and low moleculer weight fraction are increased. For that reason it has a low viscosity. Thin boiling starch widely used in textile, paper, building industries.

Characteristics

- Can be provided alternative viscosities according to customer needs
- Having a low viscosity
- Enhance good film forming ability
- Having adhesive property
- Resistant to process condition
- Wide operation shear, pH, temperature
- Extend the life of production machine

Application areas

For textile industry

- Used as a sizing agent thanks to its excellent film forming ability
- Provide strength to yarn during sizing
- Can be removed with enzymes after weaving
- Decrease the dusting during process
- Increase abration resistance
- Raise stiffness of the finished product
- Can be removed with enzymes after weaving

For paper

- Used for some fine paper size press application
- Improve paper strength and surface quality
- Decrease the loss of paper filling in the paper industry
- Improve paper strength and surface quality
- Improve surface strength and ink holdout for printing grades for calender stack applications

For building industry

- Used in gypsum board structure
- Help to form a bond between the plaster and the paper
- Provide high cohesiveness in plaster board production

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties

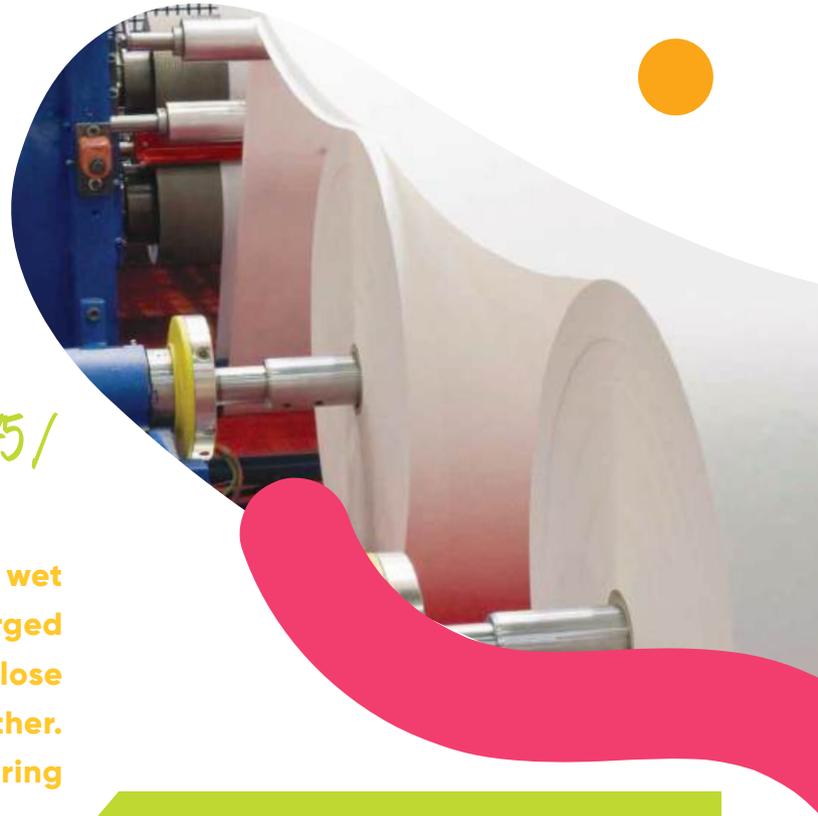
		Min	Max
pH		5	7
Moisture %		-	13
Viscosity (cP)	SMT 2216	900	1100
	SMT 2226	500	700
	SMT 2236	80	110
	SMT 2246	5	15
	SMT2246H	15	25
	SMT2260	70	100



Cationic Starch

3000 S/ 3000 H/ 3000 HH/
SMC HC 3065/ SMC HC / SMC HC 3075 /
SMC HC 3085

Cationic starch is added to paper pulp at wet end process in paper industry. Positive charged cationic starch and negative charged cellulose fibers form a bridge between each other. Bridges increase strength, decrease tearing and breaking of paper during production.



Characteristics

- Provide different mechanical strength depends on degrees of substitution
- Improve paper quality
- Support the water retention
- Reduce dusting, linting and size addition
- Compatible with synthetic resins and other chemical supplements widely used in paper industries
- Increase durability of paper.
- Provide quick drying and high filling performance when applied
- Greater control of paper making process
- Improve paper machine runnability as well as productivity
- As a surface size agent, cationic starch improves stiffness, opacity, printing quality and brightness.
- Significantly raises the softness parameter for tissue paper
- Thanks to higher degrees of substitution levels;
 - Mechanical strength
 - Tearing and bursting strength
 - Water retention capacity are improved in the process and quality of paper

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties	Min	Max
pH	5	7.5
Moisture %	-	13
DS %		
SMC 3000 S	0.041	0.047
SMC 3000 H	0.048	0.055
SMC 3000 HH	0.056	0.068
SMC HC 3065	0.069	0.081
SMC HC 3075	0.082	0.094
SMC HC 3085	0.095	0.108

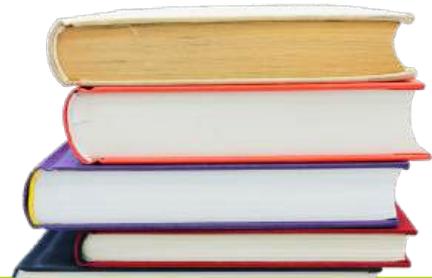




Oxidized Starch

SMO C20/ SMO C50/ SMO C80/ SMO C110

Oxidized starches with low viscosities, high stabilities and high clarities as well as film forming and binding properties have been widely used in many industries. In particular paper, textile and construction industry have used such oxidized starches for their surface sizing and coating properties.



Characteristics

- Having a stable viscosity, low gelling point, low retrogradation ratio
- Having a good film forming capacity
- Provide perfect binding between the paint and surface at print-press application
- Improve performance of paper quality tests
- Increase tensile strength of paper (bursting strength, tearing and torsion tests)
- Penetrate between fibers and increases elasticity for textile industry. Due to the increased strength, the fibers have a lower tendency to break off. Thus the weaving speed can be increased
- Unlike normal starches, oxidized starch forms a film on fiber surface. Due to this film layer, oxidized starch provides minimum dusting
- Extend production machine life

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties		Min	Max
pH		5	7
Moisture %		-	13
Viscosity (cP)	SMO C20	20	49
	SMO C50	50	79
	SMO C80	80	110
	SMO C110	110	200



Cross-linked Starch

SM BOND

SMBOND is produced by reaction of native corn starch with cross-linking resin under proper conditions. This resin imparts necessary properties to native corn starch to fit in corrugated board applications.

SMBOND is used in corrugated board adhesive to bond flutes and liner layers.



Characteristics

- Endurance against mechanical stress is enhanced
- Present long term viscosity stability during the application
- Minimize splashing on the adhesive rolls
- Spread uniformly over the rolls
- Evenly dispersion of adhesive over the rolls provides homogenous distribution on the liner board
- Enhance the viscoelastic structure of the glue which prevents overspill and eventually decreases the amount of consumption
- Provide quality improvement and high speed production due to its superior bonding power
- Provide to attain moisture balance quickly which leads to manufacture of flat layers of corrugated carton with less production lost
- Reduce the amount of use comparing the natural corn starch

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties	Min	Max
Moisture %	-	13
Ash %	-	0.6
pH	5	7.5
SO ₂ (ppm)	-	100
Protein %	-	1
Viscosity (cP)	5000	7000
Above 150 micron sieve %	-	1.0





Dextrin M90/ S2

Dextrin is produced from acid hydrolysis at high temperature of natural starch. Because of the reaction high resolution products with low viscosity and high adhesion properties are obtained.



Characteristics

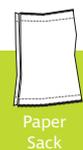
- Having a high adhesive quality
- Water soluble
- Having a low viscosity
- Can be used at higher solid levels than native or modified starch
- Create stonger bonds, more tack and faster-drying properties than pastes made from unmodified starch



Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties	Min	Max
M90		
pH	-	4
Moisture %	-	7
Solubility %	90	100
Viscosity (cP)	800	1500
S2		
pH	2.8	4
Moisture %	-	7
Solubility %	95	100





Application areas

For paper industry

- Better of paper sizing and coating with low viscosity

For adhesive industry

- Used as a water soluble glues in remoistable envelope adhesives and paper tubes

For dye industry

- Used as a carrier and the impart good adhesion of the color to the wall

For coal mining

- Using as a binding reagent for coal agglomeration
- Increase mechanical resistance and provide high heat strength
- Enhance high energy density

For production of gypsum

- Extend the lifetime
- Create porous structure and allow to the plaster/gypsum to breathe
- Decrease the density
- Increase breaking force

For fertilizer industry

- Use as a binder and filler in seed coating to arrange speed of solubility and time

For foundry industry

- Used to produce casting mould which prevent the formation of air bubbles and increase the bulking properties

For textile industry

- Increase the fabrics weight and rigidity for sizing/dressing application as a coating reagent
- Can be used in high solid concentration because of low viscosity





Food Grade Dextrin

SM FDEX 80100

Dextrin is obtained by roasting of native starch with acid and application of heat. Dextrin is high soluble, high fiber content, low viscous, adhesive and stable in its properties. SM FDEX creates low viscous, transparent gel.

Characteristics

- Water soluble
- Alternative source of soluble fiber
- Sugar reducer
- Replace sugar by offering option to reduce sugar and to achieve caloric reduction
- Fat replacer
- Thickener
- Binder
- Used as adhesive in food
- Used to increase consistency
- Low and stable viscosity
- Improves mouthfeel
- Masks metallic flavors
- Bright appearance and color

Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties

	Min	Max
Solubility %	80	-
Ash %	-	0.3
Moisture %	-	7
pH	3	4.5
Protein %	-	0.6
Viscosity (cP)	800	1500
SO ₂ (ppm)	-	10
Above 150 micron sieve %	-	1.0



Applications

Bakery, Savory and snacks

In the structure of the product;

- Provide fiber supplement for foods
- Used as a crisping agent
- Improve the textural properties of the product
- Give a uniform appearance
- Give a crispiness
- Give a fluffy look
- And help to maintain the crispy and fluffy look for a certain period of time

Fried meat, Fried chicken, Finger potato fries, Frozen meats and chicken

In the coating dough;

- Used as a crisping agent
- Improve the textural properties of the product
- Give a uniform and attractive appearance
- Give a fluffy look
- Give freeze-thaw texture stability
- Maintain foods textural properties for a certain period of time

Processed Meat

- Used as a fat replacer
- Act like adhesive/binder



Confectionary

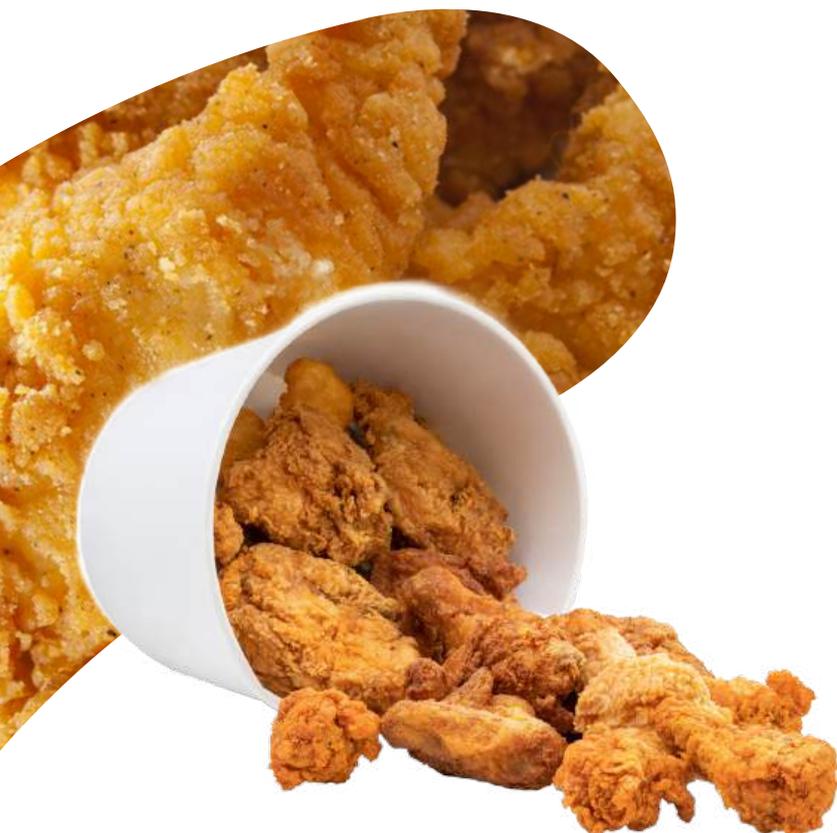
- Used as a sugar reducer
- Decrease calorie
- Enhance fiber content
- Source of soluble fiber
- Act as a prebiotic

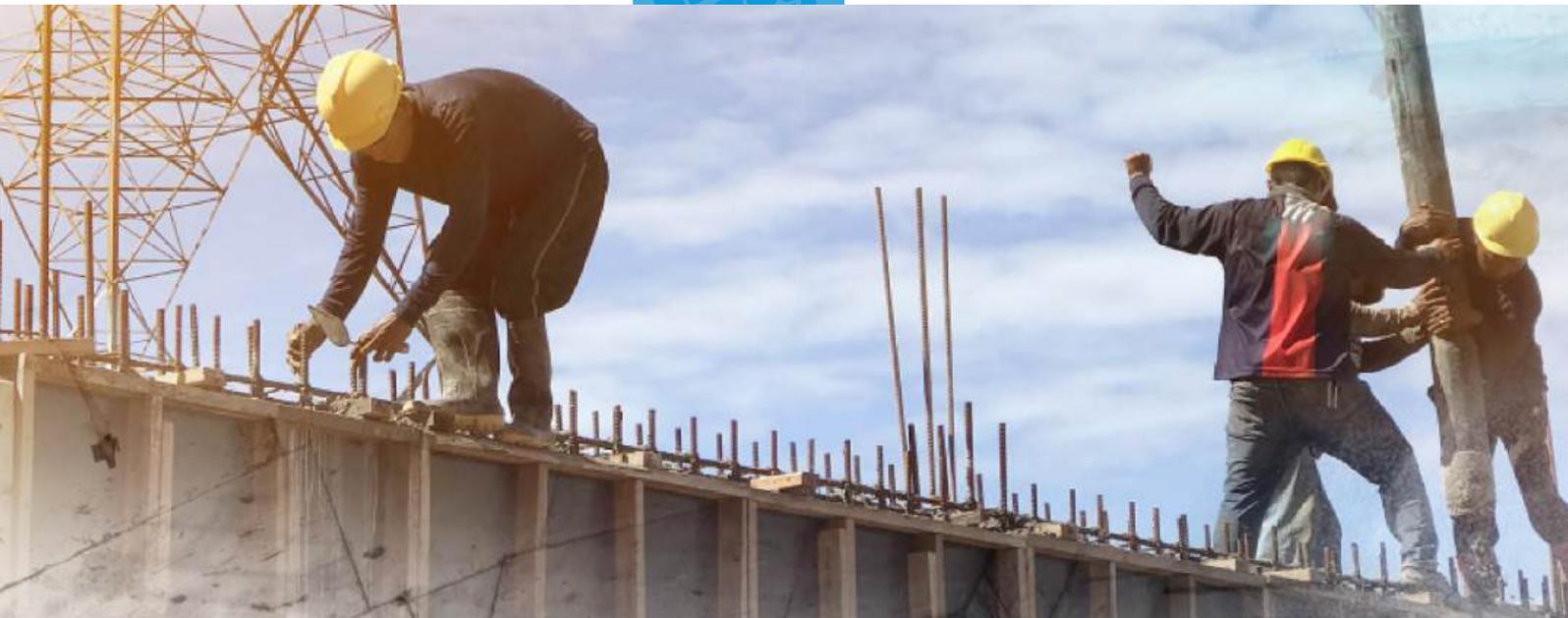
Fruit Juice

- Substitute pulpy structures in pulpless fruit juices
- Enhance fiber content
- Source of soluble fiber
- Act as a prebiotic
- Having low viscosity
- Give ability to arrange the fluidity

Coated Dried Nuts

- Enhance binding properties in between nuts and the coating dough
- Improve crispiness
- Give fluffy texture
- Create air bubbles





Sodium Gluconate

Liquid Sodium Gluconate (%40)

Powder Sodium Gluconate

Characteristics

- Good solubility in water
- Odorless, yellowish powder
- Non-corrosive and non-toxic
- Biodegradable and environment friendly
- Heat stable
- Has a retarding effect on concrete
- Forms stable complexes with metals at wide pH ranges
- It is an alternative to synthetic complexing (chelating) agents
- Prevents corrosion and lime formation

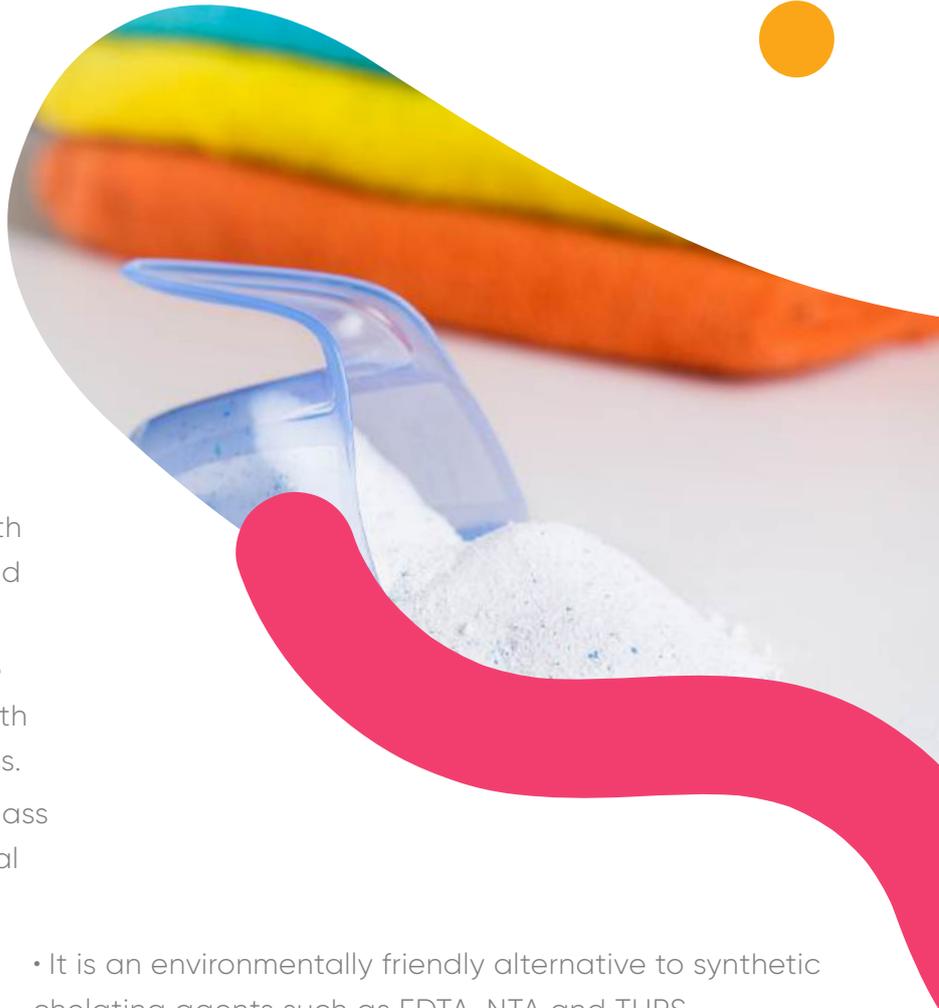
Packaging Type: Paper Sack, Big Bag

Shelf Life: 2 years

Physical and Chemical Properties:

	Min	Max
Liquid Sodium Gluconate 40		
Brix (20° C)	43	46
pH	5	7.5
Powder Sodium Gluconate		
Moisture %	-	1.0
Sodium Gluconate %	98	-
Reducing Sugar % (on DB)	-	0.7
pH	5.5	7.5





Applications

- It increases the workability and strength of concrete with its setting retardant and plasticizer properties.
- It preserves the workability of concrete even during long distance transports with concrete mixers and prevents water loss.
- It is a suitable cleaner for metal and glass surfaces with its chelating (binding metal ions) and noncorrosive properties.

- It is an environmentally friendly alternative to synthetic chelating agents such as EDTA, NTA and THPS.
- It acts as a softener in water treatment.
- It prevents the reaction of hard water ions with alkali in alkaline detergents. This feature increases the effectiveness of the cleaning product.
- It can be used in many industrial applications such as agricultural chemicals, construction chemicals, textile chemicals, paints, inks.





Food Grade Crosslinked Starch

SMCRS

SMCRS is a type of crosslink starch. That provides desired texture and improved mouthfeel to wide range of food applications. SMCRS has resistance to different levels of pH and temperature. Due to its stable viscosity while cooling, SMCRS is used as a texture stabilizer.



Characteristics

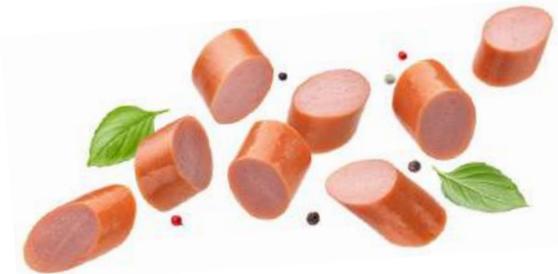
- Thickener/binder
- Provide smooth and short texture
- Create tender gel while cooling
- Stable viscosity profile
- Resist to the different level of pH and mechanical stress.

Applications

Processed Meat

- Used as a binder
- Acting as a water binder
- Improve elasticity
- Improve the abilities to
 - Slice
 - Peel the outer shell
 - Stabilize the texture of the food materials

Sausage, salami and the other type of processed meat



Creamy Dressing and Filler

- Used as thickener
- Stabilize the texture
- Provide smooth and shiny gel

Bakery cream, wafer/ biscuit cream, ketchup, salad sauces, etc.

Packaging Type: Paper Sack, Big Bag		
Shelf Life: 24 months		
Physical and Chemical Properties	Min	Max
Moisture %	10.0	13.0
Ash %	-	0.2
pH	5.0	7.0
SO2	-	10
Protein %	-	0.5
Aflatoxine Total	-	4.0
Viscosity	1900	2500



Industrial Grade Carboxyl Methyl Starch

SUNSIZE CMS

SUNSIZE CMS is a carboxyl methyl starch. It is cold water soluble CWS and has low viscosity and high film forming properties. It can be used in textile sizing application as a coating agent, in paper process as an anionic end and in oil drilling industry a water binder.



Applications

Textile

In sizing application of yarn;

- Create transparent and elastic film on the yarn
- Improve strength of the yarn
- Decrease dusting
- Increase resistance to abrasion
- Increase the performance of the weaving loom
- Improve solubility of sizing agent
- Enzyme is not required during washing process

Characteristics

- Cold water soluble
- Easily dissolve in solution without lump formation
- Anionic starch
- Having high absorption property
- Having excellent sizing effect
- Provide transparent flexible/elastic films
- Having good adhesion property
- High performance water holding capacity

Paper Industry

In the paper production;

- Bind to the negative ends of cellulose
- Improve mechanical strength
- Improve tearing and bursting strength
- Increase water retention
- Improve paper quality

Oil Drilling Industry

During drilling application;

- Act as a water binder
- Increase absorption capacity



Packaging Type: Paper Sack and Big Bag

Shelf-Life: 24 months

Physical and Chemical Properties	Min	Max
Moisture %	-	13.0
pH	9.0	12.0
Protein %	-	0.5
Ash %	-	8.0
Degrees of Substitution	0.11	0.16



SM OBM

SM OBM is a ready to use glue for corrugated board. The product provides ease of application for customers.

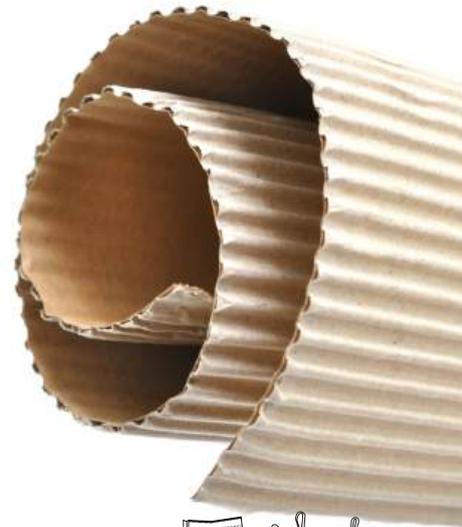
Characteristics

- Unique combination of robustness and rheological properties
- Improved product that suitable for different machine speeds and paper qualities
- Easy dispersion in water
- Ease to apply
- Ensure safety in handling
- Easy process automation
- Provide high glue-ability process

Application

Corrugated Cardboard

- Improve bonding
- Reduce delamination, waste
- Give less retrogradation during pumping and facilitates significantly longer storage time
- Reduce the drying processing time that is required between the corrugator and conversion, minimizing the volume of work-in-progress



Paper Sack



Big Bag

SMPR 7525

SMPR 7525 is a developed sizing agent used for open-end sizing processes.

Characteristics

- Show stable viscosity and less retrogradation
- Ease to use at cold weather
- Easy dispersion in water
- Provide good filming ability
- Increase binding properties



Applications

- Increase resistance to friction by forming a film layer on warp yarns
- High repeatability
- Reduce dusting, increase weaving performance
- Increase strength of yarn



SUNSIZE 100

Sunsize100 is developed as a sizing agent. It works at the range of NE 20/1 to 60/1 easily.

Applications

- Increase strength of yarns
- Enhance weaving performance
- Improve elasticity
- Reduce the electrification of yarns
- Increase resistance to friction by forming a film layer on warp yarns.
- High repeatability

Characteristics

- Easy dispersion in water
- Ease to use
- Provide good filming ability
- Increase binding properties
- Insensitive to humidity changes



Packaging



Packaging Type	Product Type	Weight(kg)	Weight Per Pallet (kg)
Kraft Bag	Starches, Modified Starches, Dextrins	25	25*60 =1.500
Polypropylene Bag	Corn Gluten Meal	50	
Bulk	Glucose-Fructose Syrups, Glucose Syrups	25.000	
Bulk	Sorbitol, Maltitol	25.500	
Bigbag	Starch	1.000	1.000
Bigbag	Starch	850	850
Plastic Barrel	Glucose Syrup	300	300*4=1.200
Plastic Barrel	Glucose Syrup	320	320*4=1.280
Plastic Barrel	Glucose-Frucose Syrup	280	280*4=1120
Plastic Barrel	Sorbitol, Maltitol	300	300*4=1.200
Metal Barrel	Glucose Syrup	300	300*4=1.200
Metal Barrel	Glucose - Fructose Syrup	280	280*4=1.120
Tin Can	Glucose-Fructose Syrup	24	24*60=1.440
Tin Can	Glucose Syrup, Maltitol	25	25*60=1.500
Tin Can	Sorbitol	23	23*60=1.380
Tin Can (Round)	Glucose Syrup	25	25*36=900
IBC	Glucose Syrup	1.300	1.300
IBC	Sorbitol	1.300	1.300
IBC	Maltitol	1.400	1.400
Flexitank	Glucose-Fructose, Glucose, Maltitol	22.500	
Flexitank	Sorbitol	23.000	



Container

Product		Bulk/Pallet	Packaging Type	Weight(Kg)	Quantity	Total Weight(Kg)		
20 DC Container	STARCH AND DERIVATIVES	Starch	Pallet	Kraft Bag	25	540	13.500	
		Starch	Bulk	Kraft Bag	25	840	21.000	
		Thin Boiled Modified Starch	Bulk	Kraft Bag	25	800	20.000	
		Cationic Starch Cross Linked Starch	Bulk	Kraft Bag	25	760	19.000	
		Oxidized Starch	Bulk	Kraft Bag	25	780	19.500	
		Dextrin	Pallet	Kraft Bag	25	540	13.500	
		Dextrin	Bulk	Kraft Bag	25	840	21.000	
		GLUCOSE SYRUPS	Glucose Syrups	Bulk	Tin can	25	864	21.600
	Glucose Syrups		Pallet	Tin can	25	600	15.000	
	Glucose Syrups		Pallet	Metal Barrel	300	80	24.000	
	Glucose Syrups		Pallet	Closed-Head Drum	300	80	24.000	
	Glucose Syrups		Pallet	Closed-Head Drum	320	80	25.600	
	Glucose Syrups		Bulk	FlexiTank	22.500	1	22.500	
	Glucose-Fructose Syrup (Smf42)		Pallet	Metal Barrel	280	80	22.400	
	Maltose Syrups		Bulk	FlexiTank	22.500	1	22.500	
	POLYOLS	Sorbitol	Pallet	Tin can	23	600	13.800	
		Maltitol	Pallet	Tin can	25	600	15.000	
		Sorbitol/Maltitol	Pallet	Closed-Head Drum	300	80	24.000	
		Sorbitol	Bulk	Tin can	23	864	19.872	
		Maltitol	Bulk	Tin can	25	864	21.600	
		Sorbitol	Bulk	FlexiTank	23.000	1	23.000	
		Maltitol	Bulk	FlexiTank	22.500	1	22.500	
	40 DC Container	STARCH AND DERIVATIVES	Cross Linked Starch	Pallet	Kraft Bag	25	1.080	27.000
			Starch Cationic Starch Oxidized Starch Dextrin Thin Boiled Modified Starch	Pallet	Kraft Bag	25	1.100	27.500
			Starch	Pallet	Big Bag	850	32	27.200
			Cationic Starch	Pallet	Big Bag	1.000	21	21.000
			Cationic Starch Oxidized Starch Thin Boiled Modified Starch	Pallet	Big Bag	850	32	27.200
			GLUCOSE SYRUPS	Glucose Syrups	Pallet	Tin Can	25	1.060
Glucose Syrups		Pallet		Round	25	792	19.800	
Glucose Syrups		Pallet		Round	25	1.056	26.400	
Glucose Syrups		Pallet		Open Top Drums	300	80	24.000	
POLYOLS		Sorbitol	Pallet	Tin Can	23	1.080	24.840	
		Maltitol	Pallet	Tin Can	25	1.080	27.000	
		Sorbitol	Pallet	Ibc Tank	1.300	20	26.000	
		Maltitol	Pallet	Ibc Tank	1.400	19	26.600	
Corn Gluten Meal		Bulk	Polypropylene Bag	50	540	27.000		



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