UNMODIFIED MAIZE STARCH	Amyral® Oiled Moulding Starch	Oiled Moulding Starch	A finely powdered, creamy maize starch containing a small portion of food grade mineral oil. It is specifically designed for confectioner's moulding.	Confectionery, moulding
	Amyral® Food Grade Starch	Yellow Cornstarch	A thick boiling maize starch. It is a fine, creamy, odourless powder with a slight characteristic taste. It is derived from the wet milling of maize, and it receives special refining and washing treatment to ensure the maximum purity	Soups, baking, bulking agent, canning, herb & spice carrier, chemicals, noodles, chewing gum, condiments, confectionery, cosmetics, dehydrated foods, dry mixes, food powders, gravies, pharmaceuticals, puddings, sauces
	Amyral® Low Moisture Food Grade Starch	Yellow Cornstarch Low Moisture	A thick boiling maize starch. It is a fine, creamy, odourless powder with a slight characteristic taste. It is derived from the wet milling of maize, and has been highly refined and then dried to a low moisture content.	Soup and gravy powders, baking, bulking agent, canning, herb & spice carrier, chemicals, chewing gum, condiments, confectionery, cosmetics, dehydrated foods, dry mixes, food powders, gravies, pharmaceuticals
	Amyral® Food Grade Starch	White Cornstarch	A thick boiling maize starch. It is a fine, white, odourless powder with a slight characteristic taste. It is derived from the wet milling of maize, and it receives special refining and washing treatment to ensure the maximum purity	Thickening, baking, bulking agent, canning, herb & spice carrier, chemicals, noodles, chewing gum, condiments, cosmetics, dehydrated foods, dry mixes, food powders, gravies, puddings, sauces, soup & gravy powders
	Amyral® Low Moisture Food Grade Starch	White Cornstarch Low Moisture	A thick boiling maize starch. It is a fine, white, odourless powder with a slight characteristic taste. It is derived from the wet milling of maize, and has been highly refined and then dried to a low moisture content.	Soup and gravy powders, baking, bulking agent, canning, herb & spice carrier, chemicals, chewing gum, condiments, confectionery, cosmetics, dehydrated foods, dry mixes, food powders, gravies, pharmaceuticals
	Amyral® Pharmaceutical Starch	White Pharmaceutical Starch	A fine, white, odourless maize starch derived from white maize which has received special treatment during refining and washing. This ensures the maximum purity and quality required for pharmaceutical applications.	Pharmaceuticals
	Amyral® Brewing Starch	Brewing Starch	A fine, creamy, odourless maize starch powder. It is derived from the wet milling of maize, and has been highly refined.	Brewing
	Amyral® Moulding Starch	Yellow Moulding Starch	A finely powdered, creamy starch derived from maize. It is specifically produced as a moulding agent for confectionery.	Confectionery, moulding
	Amyral® Moulding Starch	White Moulding Starch	A finely powdered, white starch derived from white maize. It is specifically produced as a moulding agent for confectionery.	Confectionery, moulding
	Amyral® Waxy Starch	Waxy Maize Starch	A fine, creamy, odourless powder with a slight characteristic taste. It is derived from the wet milling of waxy maize, and it receives special refining and washing treatment to ensure the maximum purity and quality required of an edible starch.	Canning, sauces
	Amyral® Powdered Starch	Yellow Industrial Starch	An unmodified, creamy maize starch powder, recommended for industrial use when high viscosity is required.	Adhesives, corrugated board, laundry, paper production, textile sizing
	Amyral® Powdered Starch	White Industrial Starch	An unmodified, white maize starch powder, recommended for industrial use when high viscosity is required.	Adhesives, corrugated board, laundry, paper production, textile sizing
MODIFIED MAIZE STARCH	Styclor® Acid Modified Starch	Styclor® 80	A highly acid-modified edible maize starch. When heated in water it thickens to a peak viscosity, which thins with further cooking. On cooling, the solution thickens rapidly and sets to a firm gel.	Confectionery, frozen desserts, paper production, textile sizing
	Styclor® Acid Modified Starch	Styclor® 60	A medium acid-modified edible maize starch. When heated in water it thickens to a peak viscosity, which thins with further cooking. On cooling, the solution thickens rapidly and sets to a firm gel.	Confectionery, frozen desserts, paper production, textile sizing
	Stydex® Speciality Dextrin	Thin boiling white Dextrin 4055	Produced when unmodified maize starch is dextrinised by catalytic treatment. It is classed as a thin-boiling white dextrin.	Adhesives, briquetting, building materials
	Stydex® Speciality Dextrin	Thin boiling white Dextrin 4030	Produced when unmodified maize starch is dextrinised by catalytic treatment. It is classed as a thin-boiling white dextrin.	Adhesives, briquetting, building materials
	Stydex® Speciality Dextrin	Thin boiling yellow Dextrin 6008	A low moisture dextrin derived from the catalytic treatment of maize starch. It is classed as a thin boiling yellow dextrin.	Adhesives, briquetting, building materials, ore flotation
	Stydex® Speciality Dextrin	Thick boiling white Dextrin 2012	Made from catalytic dextrinisation of maize starch. It is classed as a thick-boiling white dextrin.	Adhesives, briquetting, building materials
	Stygel® FS Pregelatinised Starch	Stygel® FS	Is a pregelatinised starch made from unmodified edible maize starch. Stygel® FS is cold water swelling and commonly used as a thickening agent.	General foods
	Stygel® T Pregelatinised Starch	Stygel® T	A pregelatinised starch made from unmodified maize starch. Stygel® T is cold water swelling and commonly used as a binder.	Chemicals, briquetting
	Stygel® W Pregelatinised Starch	Stygel® W	A cold water, swelling, unmodified, waxy maize starch with high viscosity and good clarity. Does not gel. Provides extra puff in extruded snacks.	Extruded snacks, confectionery
	Stygel® M Pregelatinised Starch	Stygel® M	A cold water swelling modified waxy maize starch with good heat and shear stability. Stable under moderate processing conditions. Suitable for low to medium acid foods.	Instant sauces, bakery fillings, instant custards
	Stygel® H Pregelatinised Starch	Stygel® H	A cold water swelling modified waxy maize starch with enhanced heat and shear stability. Stable under severe processing conditions. Suitable for high acid foods.	Fruit pie fillings, mayonnaise, salad dressings, yoghurt
	Stypres® Speciality Starch	Stypres® 150	Produced by the dry modification of yellow maize starch in the presence of hydrogen chloride gas and neutralised using ammonia gas.	Mining
	Stypres® Speciality Starch	Stypres® 200	Produced by the dry modification of yellow maize starch in the presence of hydrogen chloride gas and neutralised using ammonia gas.	Mining
	Stycros M® Speciality Starch	Stycros M®	Short textured gel with a good mouthfeel. Suitable for retorted products. Will not form a rigid gel on cooling.	Canned beans and spaghetti, soups, sauces, baby foods, cream style corn, canned mushrooms.
	Stycros H® Speciality Starch	Stycros H®	Suitable for use in low pH products with high shear processing conditions. Short textured clear soft gels.	Mayonnaise, salad dressings, mustard, pickles, chilli and sweet & sour sauces.
	Stycros HH® Speciality Starch	Stycros HH®	Suitable for use in low pH products with high shear processing conditions. Short textured clear soft gels.	Mayonnaise, salad dressings, mustard, pickles, chilli and sweet & sour sauces.
	Instant Pregelatinised Starches*	Instant FTD176	A Cold water swelling dual modified starch. Short texture, good heat and shear stability with freeze thaw properties.	Frozen fruit pie fillings, frozen toppings, instant custards, puddings.
	Instant Pregelatinised Starches*	Instant 449	Similar to FTD176 but with enhanced acid resistance.	Frozen berry fruit fillings, mayonnaise, salad dressings, yoghurt.
	Stydex® Speciality Starches	Creamy Dextrin	A low moisture dextrin derived from the catalytic treatment of maize starch. It is classed as a thin boiling yellow dextrin.	Adhesives, briquetting, building materials, ore flotation
	Stytex Speciality Starch	Stytex 50	A medium acid-converted waxy maize starch cooks easily to form clear, stable solutions that have good adhesion powers	Warp sizing of textile yarns
	Modified Casava Starch	Styflo CS	Suitable for retorted products. Gels are freeze-thaw stable with good gloss, clarity and mouthfeel. Will not form rigid gels on cooling.	Soups, frozen products, dairy desserts and custards, canned products, meat pie fillings
ACID CONVERTED GLUCOSE SYRUP	Hyclear® Glucose Syrup	Neutral 43	A medium conversion, high viscosity glucose syrup which can be used in the pharmaceutical industry.	Baking, chewing gum, confectionery, dairy products, general foods, pharmaceuticals
	Hyclear® Glucose Syrup	Std 43	A medium conversion, medium viscosity glucose syrup.	Baking, breakfast cereals, confectionery, dairy products, pharmaceuticals
	Hyclear® Glucose Syrup	Std 44	A medium conversion, high viscosity glucose syrup.	Baked goods, chewing gum, confectionery, dairy products, general foods
	Hyclear® Glucose Syrup	High Angle	A low-conversion glucose syrup, used both in food and industrial applications where increased body and viscosity are required.	Confectionery hard-boiled, confectionery candy, confectionery toffees, water ice sorbets
	Hyclear® Glucose Syrup	HDE High SO2	A high conversion, highly fermentable glucose syrup produced by the "acid-enzyme" method.	Baking, beverages, condiments, dairy products, frozen foods, pickles, preserves, confectionery
	Hyclear® Glucose Syrup	HDE Low SO2 Canners	A high conversion glucose syrup.	Canning
	Hyclear® Glucose Syrup	Glucose 45	A medium conversion, high viscosity glucose syrup.	Baked goods, chewing gum, confectionery, dairy products, general foods
	Alidex 30® Syrup	Alidex 30®	A low DE syrup used extensively in spray-drying operations where the lowest possible DE's are required. The relatively low DE enables the low-humectancy properties required for this operation to be exploited.	Coffee, creamers, flavour agents, fruit juice, spray drying
ENZYME CONVERTED GLUCOSE SYRUP	Hymalt® Maltose Syrup	High Maltose for Canners	An intermediate conversion, medium viscosity maltose syrup. It is commonly used in the canning industry.	Beverages, canning, glacé fruits, general foods
	Brewmaltose® Syrup	Brewing Maltose	An intermediate conversion, medium viscosity maltose syrup. It is commonly used as a brewing adjunct.	Brewing, glacé fruit
	Confectioner's Maltose® Syrup	Unimalt 52® Confectioner's Maltose	Manufactured to have a low dextrose content and a high maltose content, making it especially useful in the confectionery industry.	Confectionery
	Canners Blend	Canners Blend	A blend of enzyme converted syrup for use in jams.	Jams, canning
	Confectioners Blend	Confectioners Blend	A blend of enzyme converted, high converted syrups	Baking, beverages, condiments, dairy products, frozen foods, pickles, preserves, confectionery
POWDERED GLUCOSE	Dridex 9® Powdered Malto-dextrin	Dridex 9®	A low converted maize starch hydrolysate called a maltodextrin. This Maltodextrin is a white powder with a bland flavour. The low DE makes it ideal as a carrier in applications where low moisture retention is required.	Baking, beverage powders, coffee, dehydrated foods, frozen desserts, ice cream, soup & gravy powders, sports /energy drinks
	Unidri Powdered Malto-dextrin	Unidri 20®	A low converted maize starch hydrolysate called a maltodextrin. This Maltodextrin is a white powder with a bland flavour. The product is ideal as a carrier or filler where the DE must be slightly higher than that of the low DE products. The product is soluble, has low sweetness, and is easily digestible.	Baking, beverages, coffee, dehydrated foods, frozen desserts, ice cream, soup & gravy powders, tablets, sports /energy drinks
	Dridex® Powdered Glucose	Dridex 30®	A low converted maize starch hydrolysate. Dridex® is a white powder with a bland flavour. The product is ideal as a carrier or filler where the DE must be slightly higher than that of the low DE products. The product is soluble, has low sweetness, and is easily digestible.	Bakery mixes, beverages, coffee whiteners, dehydrated foods, frozen foods, ice cream, soup & gravy powders, tablets, sport /energy drinks
	Monodex® Dextrose Monohydrate	Dextrose Monohydrate	A white crystalline powder, obtained from the complete hydrolysis of starch. The product is sweet to taste and may be used as a sweetener. It has many applications in the food industry, including use as a nutrient source, and as a nutritive carbohydrate in fermentation production materials such as alcohols. It can also be used as a bulking agent, a filler and an extender. Non-food applications include adhesives and concrete formulations.	Beverages, canning, confectionery, ice cream, beverage powders, sports /energy drinks
CO-PRODUCTS	Vaal Gold Gluten 20®	Gluten 20®	A medium protein, medium energy animal feed ingredient. It is a co-product of the maize milling process.	Complete Feeds, Concentrates for dairy and beef cattle, poultry layers, turkeys and pigs
	Vaal Gold Gluten 60®	Gluten 60®	A high protein, high energy animal feed ingredient. It is a co-product of the maize milling process.	Animal Feed, Poultry Feeds
	Vaal Gold®	Maize Germ	An excellent source of oil for oil extractors and refiners. The extracted residue may be used as a medium protein, medium energy animal feed ingredient.	Animal Feed, Oil Extraction & Refining
	Sorbitol	BP and Polyol grade	A sugar-alcohol manufactured by the hydrogenation of dextrose.	Food, oral-care, personal care, pharmaceutical

Specialty Products Range

Alcoholic Beverages
Glucose syrup is used as a fermenting medium or as a sweetener in Brandy, liqueurs, Port and Sherry.

Animal Feed
Manufactured in the wet-milling process, co-products have several important uses.
The fibrous husk and gluten extracted from the maize form highly nutritious ingredients used in animal feed, while maize oil is used in the manufacture of margarine and cooking oil.

Baking
Glucose syrups and dextrose are a source of fermentable carbohydrates which can assist in improving crust flavour and shelf life of bread and other baked goods.

Brewing
Starch and syrups are a source of fermentable extract in the brewing of beer. Using syrups as a liquid adjunct, it is possible to brew at high gravity, thus increasing the brewhouse throughput by up to 35%.

Briquetting
Starch is used as a binder in charcoal briquettes for the braai/barbecue.

Building
Dextrins are used to help prevent effervescence and efflorescence in face bricks.

Confectionery
Starch is used in confectionery products as a thickener, carrier and gelling agent. It also has moulding properties, which prove valuable in the manufacture of gum and jelly products. Glucose is used as a sweetener in confectionery, but also helps to control crystallisation and improve the texture of the product.

Corrugating
Starch is also used in corrugating processes as a basic ingredient of the adhesives which bond the parts of the corrugated board together.

Dairy
Glucose syrups and maltodextrins are used to improve sweetness, texture, meltdown, and overrun of ice cream. Maltodextrins can be used to replace fats without deterioration of texture and mouthfeel. Starches and syrups can be used to thicken and sweeten yoghurts.

Frozen Foods
Modified starch is used as a thickener and to improve freeze-thaw stability in frozen foods.

General Beverages
Glucose is used as a carrier, sweetener, flavour enhancer and energy source in beverages. Maltodextrins and dextrose monohydrate are ideal sources of easily digestible carbohydrates important for both prolonged and quick energy requirements in sports drinks.

Industrial
Starch and dextrins are essential parts of vegetable-based adhesive formulations. Pregelatinised starch is widely used as a binder in charcoal briquettes and in foundry core binders.

Jams & Canning
Glucose syrups are used as flavour enhancers, as crystallisation controllers and to modify sweetness in jams. Modified starches are used as thickeners in canned products.

Paper
Starch is used in the paper making process to provide internal and surface strength to paper, and it plays a valuable role in improving its printability.

Pharmaceutical
Starch plays an important role as a binder in tableting processes in many pharmaceutical products. Glucose is used as a medium in cough syrups and is a valuable energy source in pharmaceutical products. Sorbitol is used as a carrier in toothpaste, and as an excipient in mouthwashes and pharmaceutical syrups.

Prepared Mixes (Dry Groceries)
Corn starch helps to keep packaged mixes free-flowing and lump free. Dextrose and maltodextrins are used as carriers and to control sweetness in dry mixes.

Processed Foods
This industry utilises significant quantities of starch as thickeners, fillers, binders and stabilisers. Glucose is used to add gloss, density and texture to numerous food products.

Processed Meats
Starch is used as a bulking and binding agent in processed meats. Dextrose and maltodextrins provide a carbohydrate source for fermentation during the curing process.

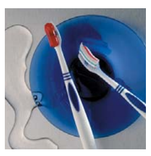
Spray Drying
Glucose is used in spray dried products as a milk and coffee extender, an integral part of any coffee whitener formulation, and is also used as a carrier during the spray drying process.

Textiles
Modified starch is used as a warp sizing agent to improve weaving efficiency in the textile industry.

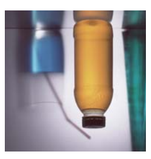
PAREV

Tongaat Hulett
STARCH

www.tongaathulettstarch.co.za










Tongaat Hulett Starch is a wet-miller of maize with mills at Klipriviér, Germiston and Meyerton in Gauteng, Bellville in the Western Cape, and a sorbitol plant at Chloorkop in Gauteng. Products include modified and unmodified starches, glucose, maltose and dextrose syrups, glucose powders, maize germ, Gluten 60®, Gluten 20®, corn steep liquor and sorbitol.

Utilising a single raw material source – corn (maize) – a wide range of products are manufactured for an equally diverse variety of industries such as food, beverage, pharmaceutical, textile, paper making, adhesives and spray drying.

Dry starches are available in either multiwall paper sacks, semi-bulk poly-woven tuff bags or bulk tankers. Glucose syrups and sorbitol are transported in bulk tankers, and for smaller users are also available in IBC-Intermediate Bulk Containers, steel drums or plastic drums. Powdered glucose is available in multiwall paper sacks.

Gluten 60® and Gluten 20® are packed in poly-woven bags, semi-bulk tuff bags or shipped in bulk containers.