



Starch Sugar Alcohol Solution

- Engineering
- Equipment
- Installation
- Commissioning
- Production Support

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Starch Sugar

All kinds of starch sugar will be got by starch hydrolysis with acid or enzyme. The liquid products include maltose, glucose syrup, fructose syrup, etc.; The solid products include dextrose monohydrate, dextrose anhydrous, crystal fructose, maltodextrin, etc. Sugar products are used to produce various alcohol products through hydrogenation reaction, which are widely used in food, medicine, chemical industry and other fields.

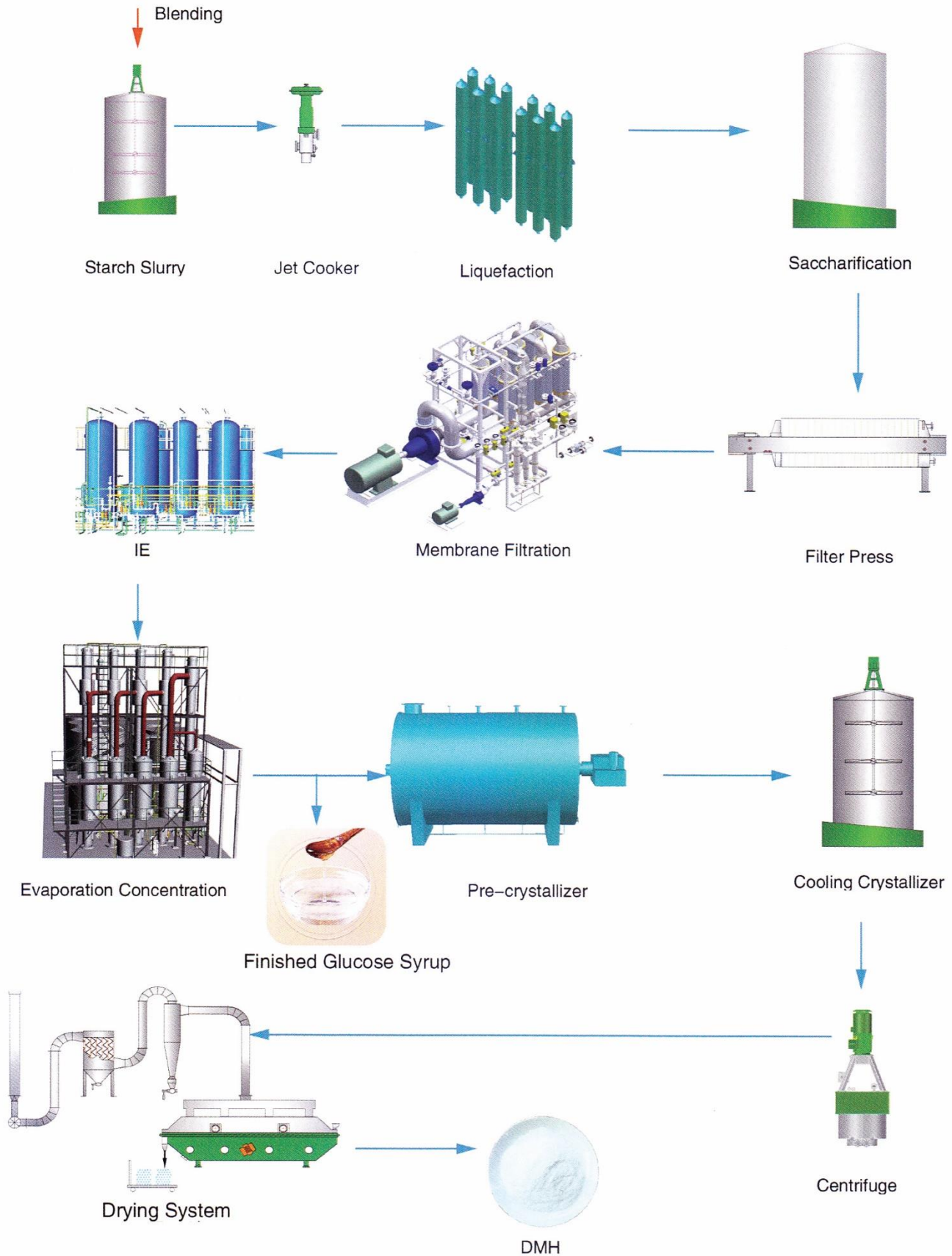
Glucose Syrup

Liquid glucose is the mixed syrup of glucose, maltose, and malt oligosaccharide syrup, which are produced by appropriate hydrolysis of starch. Glucose is the strong reducing sugar. Greater of starch hydrolysis degree and higher glucose content, the reducibility will be stronger. Usually we take the DE value to indicate the degree of starch hydrolysis. Liquid glucose can be divided into three categories which are high, medium and low according to the degree of conversion.

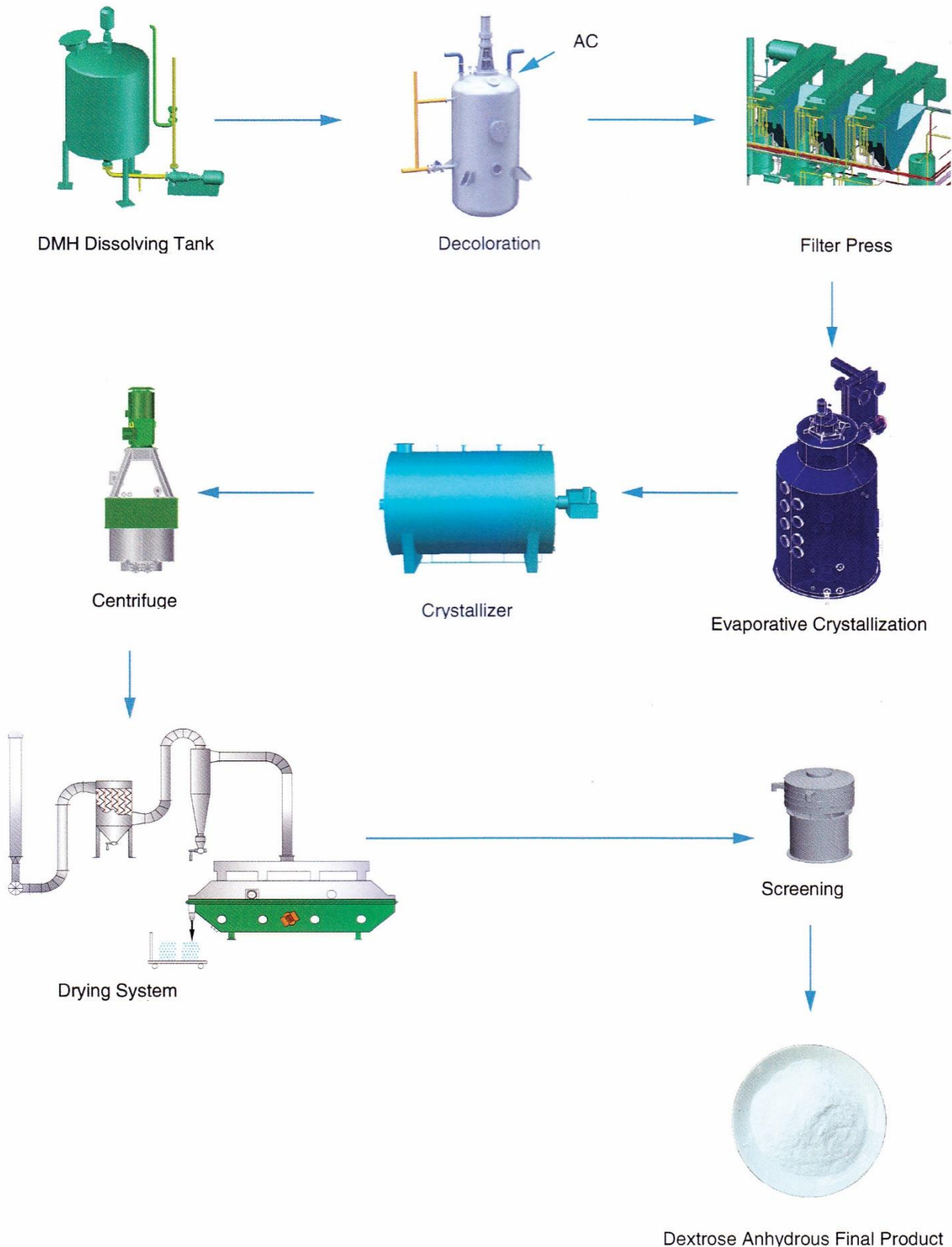
Crystallized Dextrose

Crystallized dextrose is the generic terms of the glucose under crystallization condition, which is a relatively speaking of liquid glucose and whole glucose powder. There are two categories according to the application, which are oral grade and injection grade. The sweet taste of glucose is one of the important properties. It can be directly absorbed by human body instead of through digesting system, and it also can be injected intravenously into the bloodstream for use by the patient. Glucose is the basic raw material of the fermentation industry, it also serves as a substitute of sugar cane in food and pastry processing.

Glucose Syrup and Dextrose Monohydrate Process



Dextrose Anhydrous Process



Maltodextrin

Maltodextrin is used to increase viscosity, inhibit browning reaction, and can also be used as a carrier and coating film to preserve freshness. It can improve the vitamins and calcium to human body, increase blood sugar resistance, and can also be edible by people with poor intestinal function.

Maltose

Maltose is a disaccharide formed by connecting two glucose units via an α -1,4 glycosidic bond, also called maltobiose. It has low moisture absorption and high moisturizing properties, mild and moderate sweetness, good anti-crystallization, antioxidant properties, moderate viscosity, good chemical stability, low freezing point and other characteristics. It can be widely used in food industry.

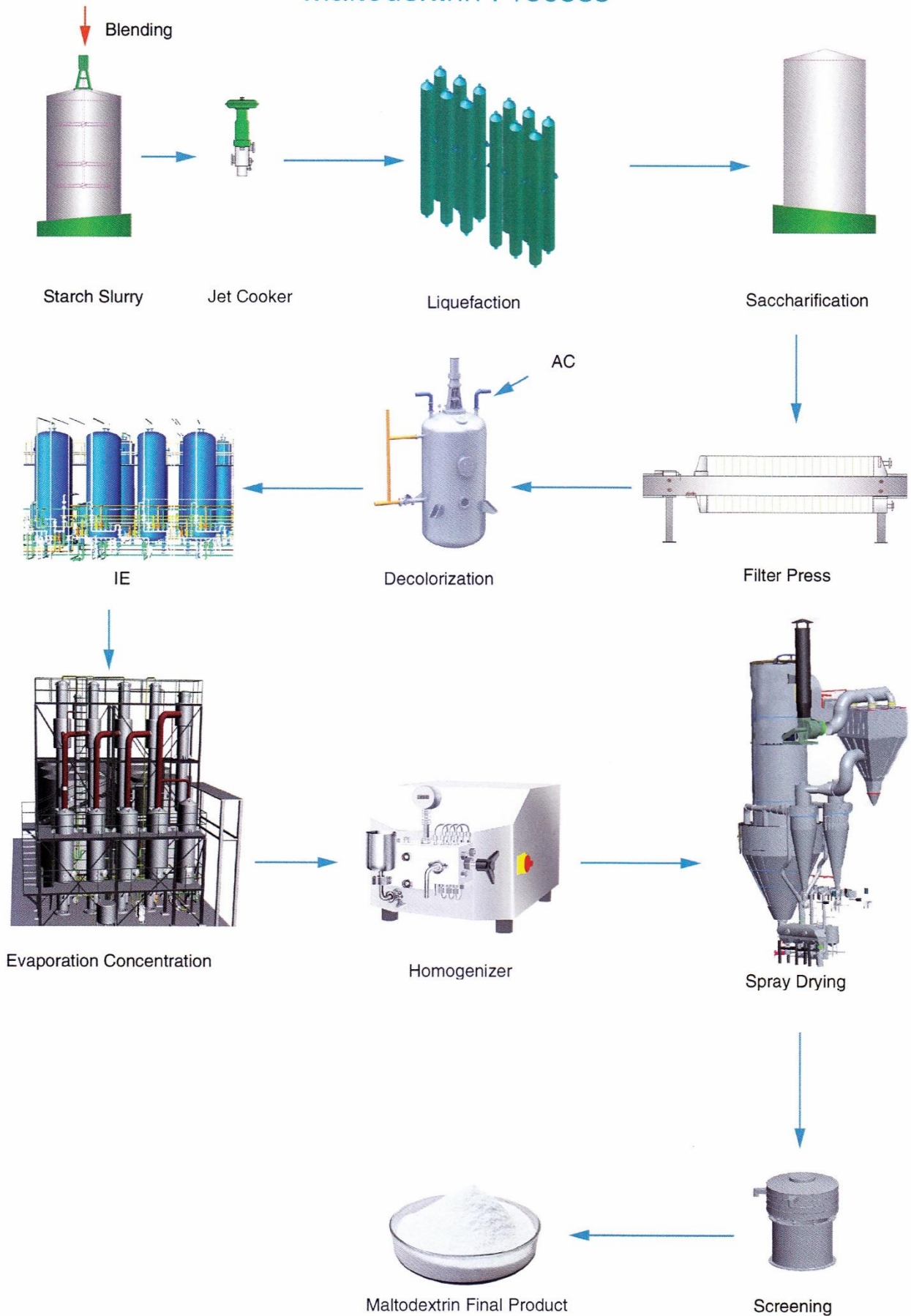
Fructose

The components of fructose are fructose and glucose, so it is called glucose-fructose syrup. D-glucose is partially converted to fructose under the action of isomerase and catalyst. The sweetness of fructose is similar with the sweetness of sucrose, it is blessed with good taste, so it is one kind of product which can completely replace sucrose, and it is widely used in the food and beverage industry.

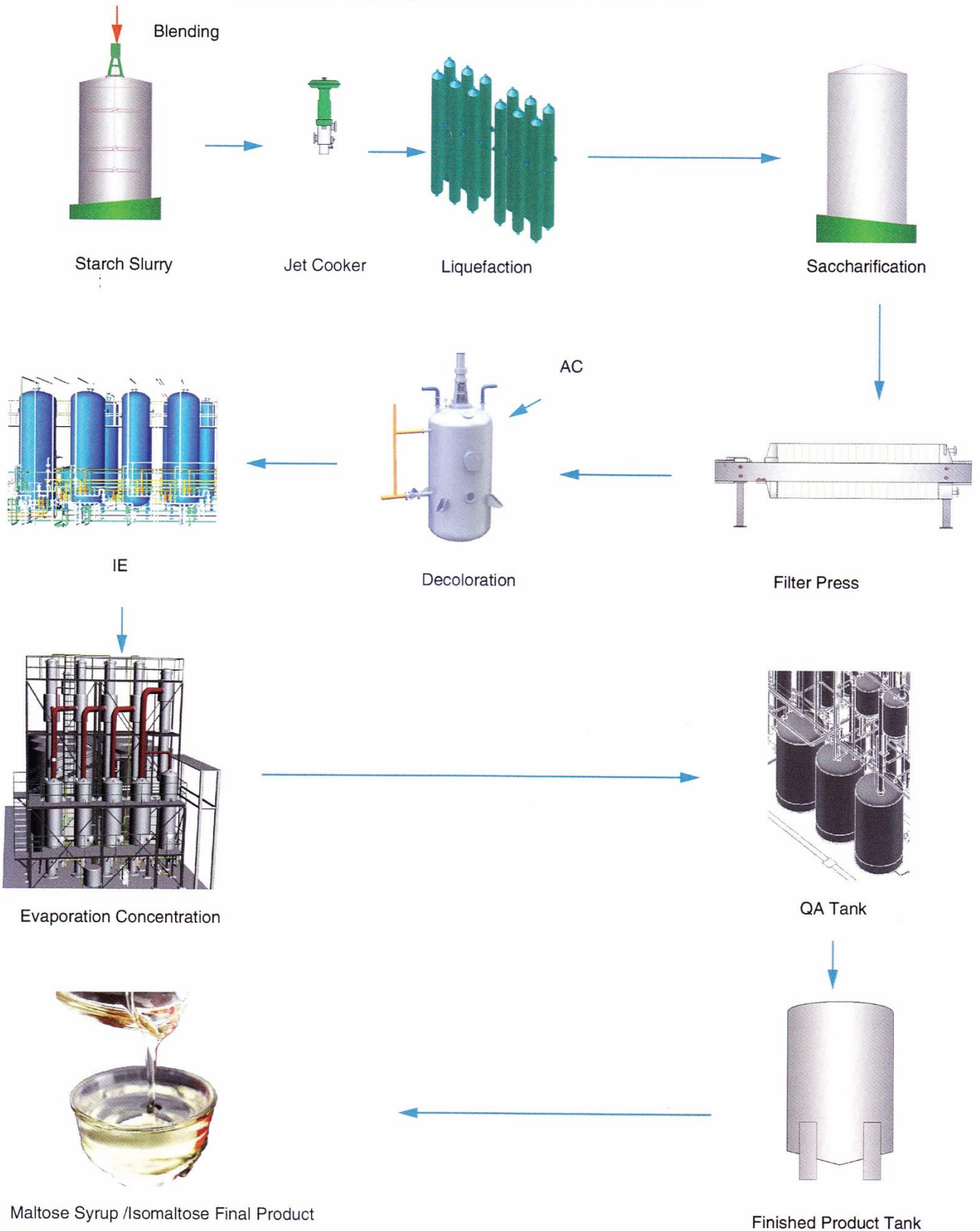
Sorbitol

Sorbitol is the raw material for the production of vitamin C and daily chemical products. It can be used as a raw material for industrial surfactants. In the pharmaceutical industry, sorbitol ester is produced through nitration of sorbitol, which is a drug for treating coronary disease.

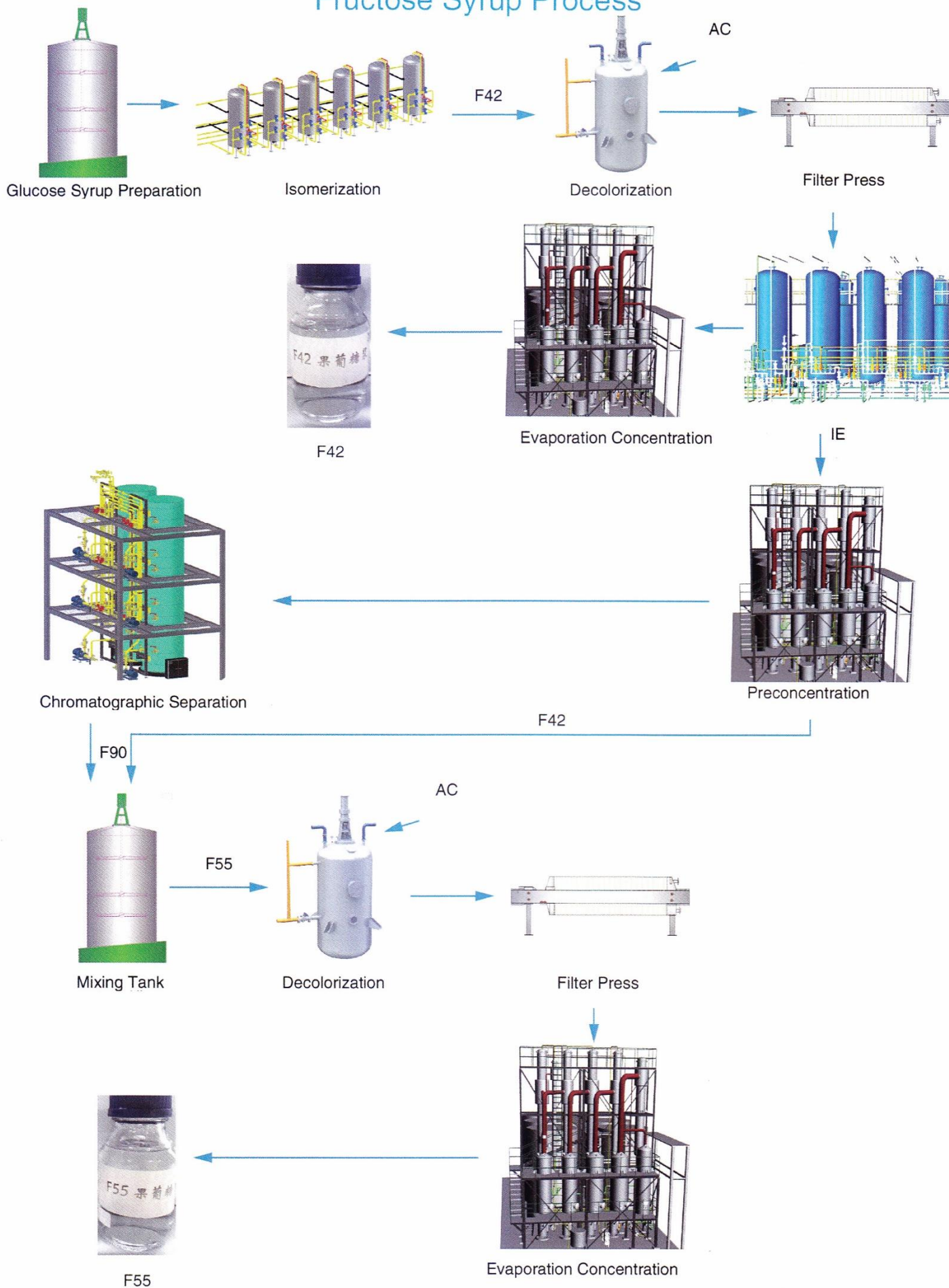
Maltodextrin Process



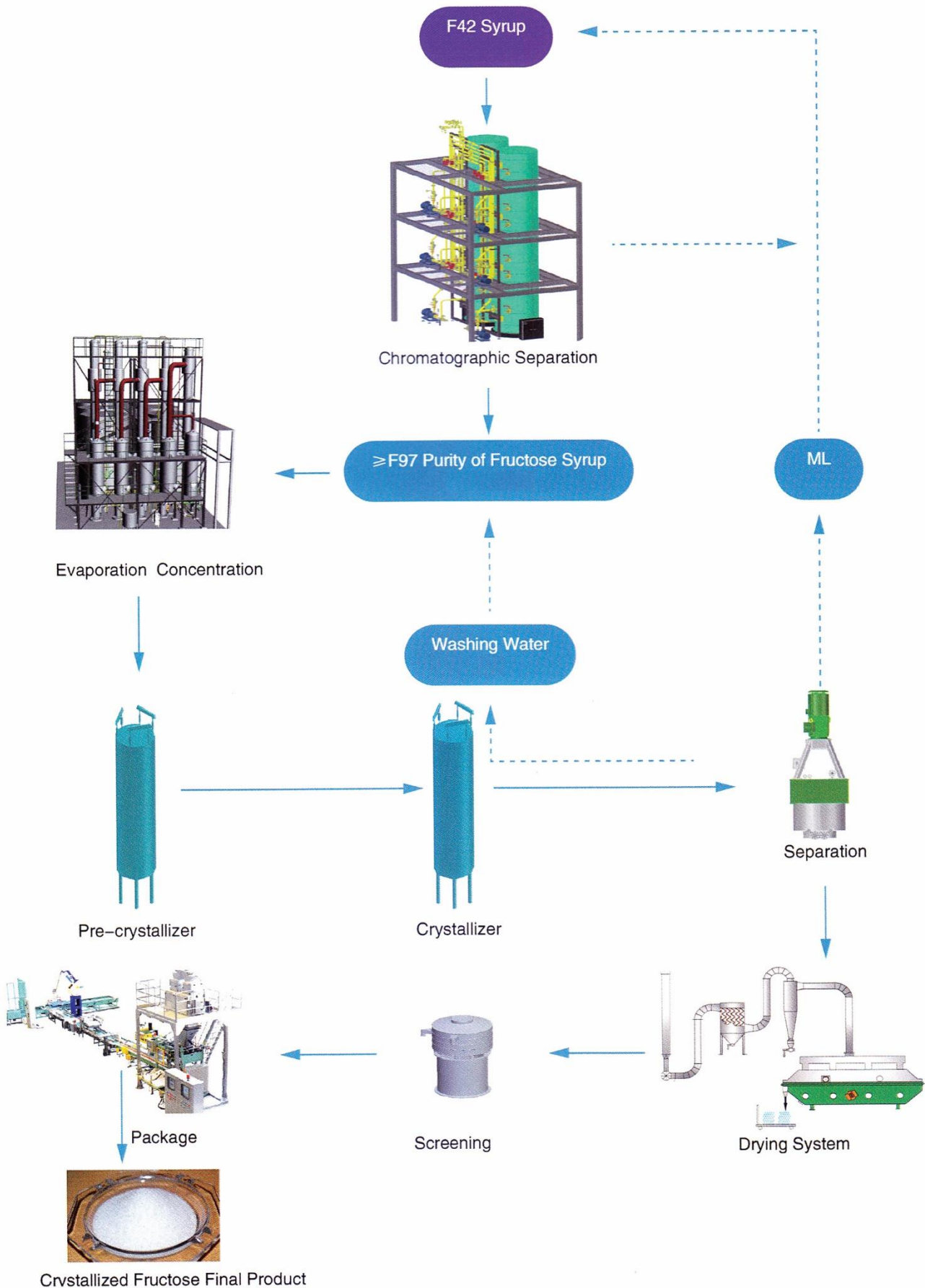
Maltose Syrup/Isomaltose Process



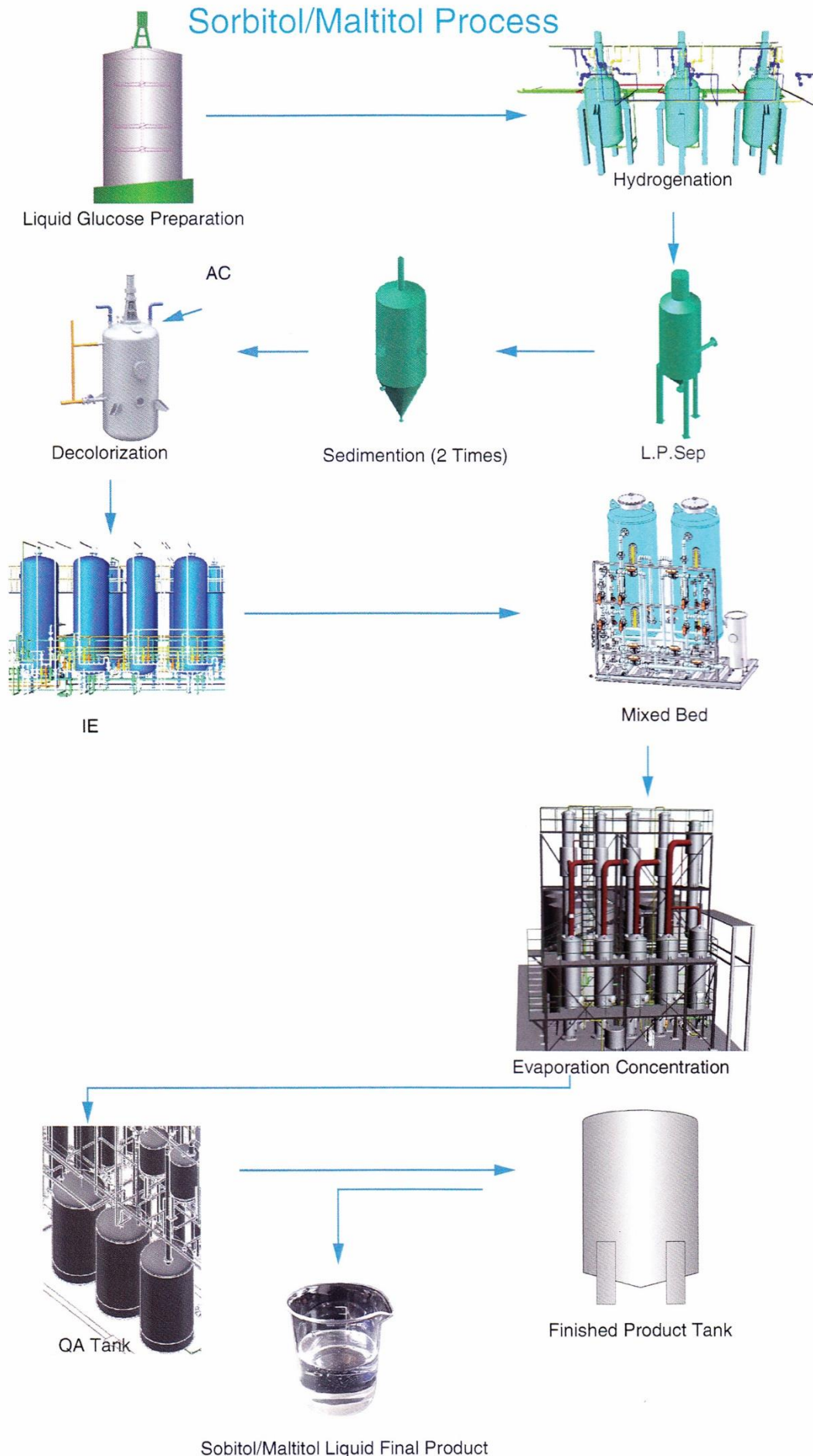
Fructose Syrup Process



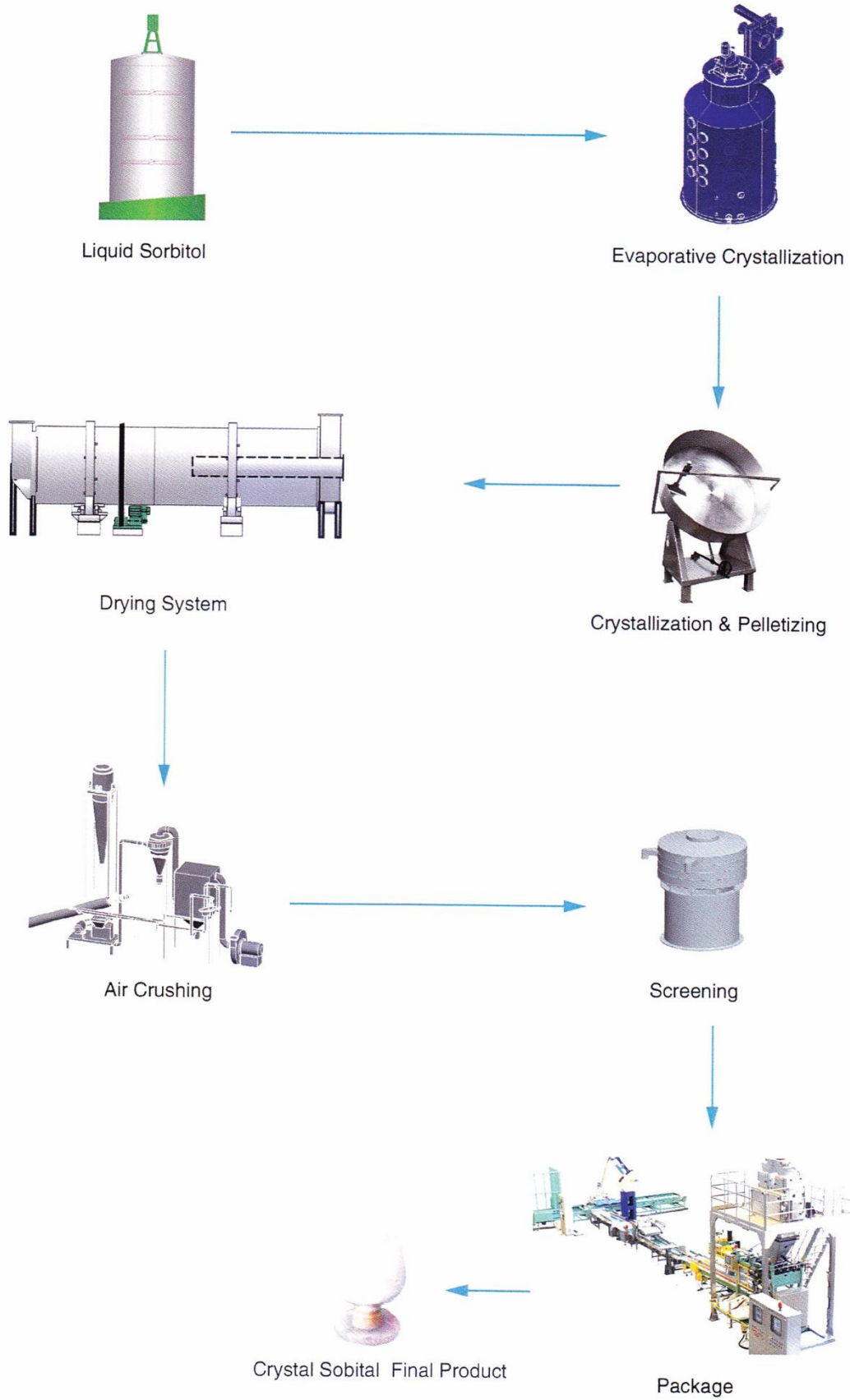
Crystallized Fructose Production Process



Sorbitol/Maltitol Process



Crystal Sorbitol Process



Maltitol

Maltitol, also known as hydrogenated maltose. It is a new type of functional sweetener. It has attracted widespread attention due to its various physiological properties, such as low calorie, non-cariogenic, indigestible, promoting calcium absorption and so on.

Mannitol

Mannitol is a kind of hexanehexol. Because it absorbs heat when dissolved, has a sweet taste and is comfortable for the mouth. Its granular type is specially used as an excipient for direct compression tablets. The excipient is also a highly permeable tissue dehydrating agent and is widely used clinically to treat cerebral edema, prevent acute renal failure, treat glaucoma, and accelerate the excretion of poisons and drugs from the kidneys.

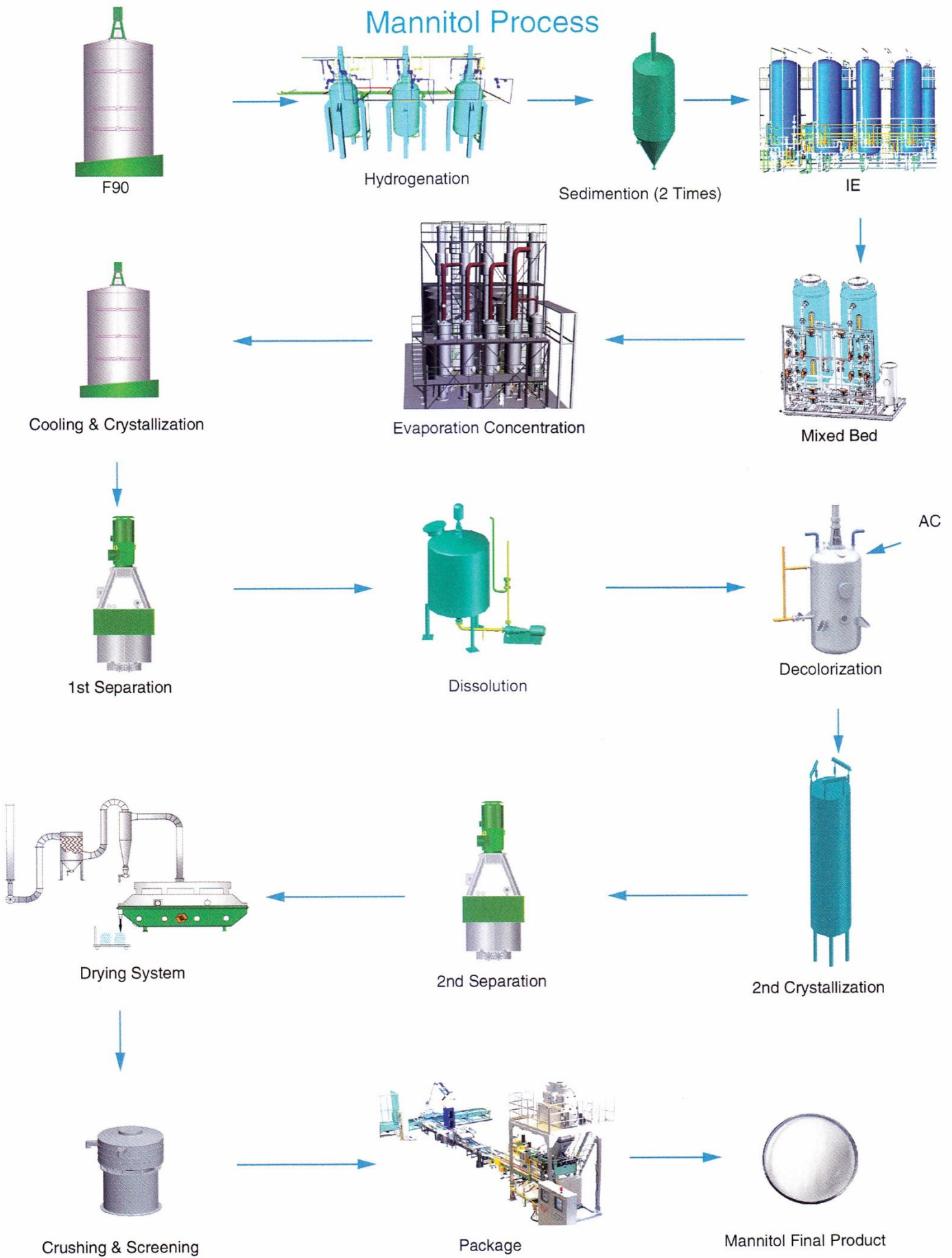
Xylitol

Xylitol is a sweetener that can replace sugar, and it is mainly used in the production of sugar-free products. It can be consumed by people with hyperglycemia and diabetes.

Polydextrose

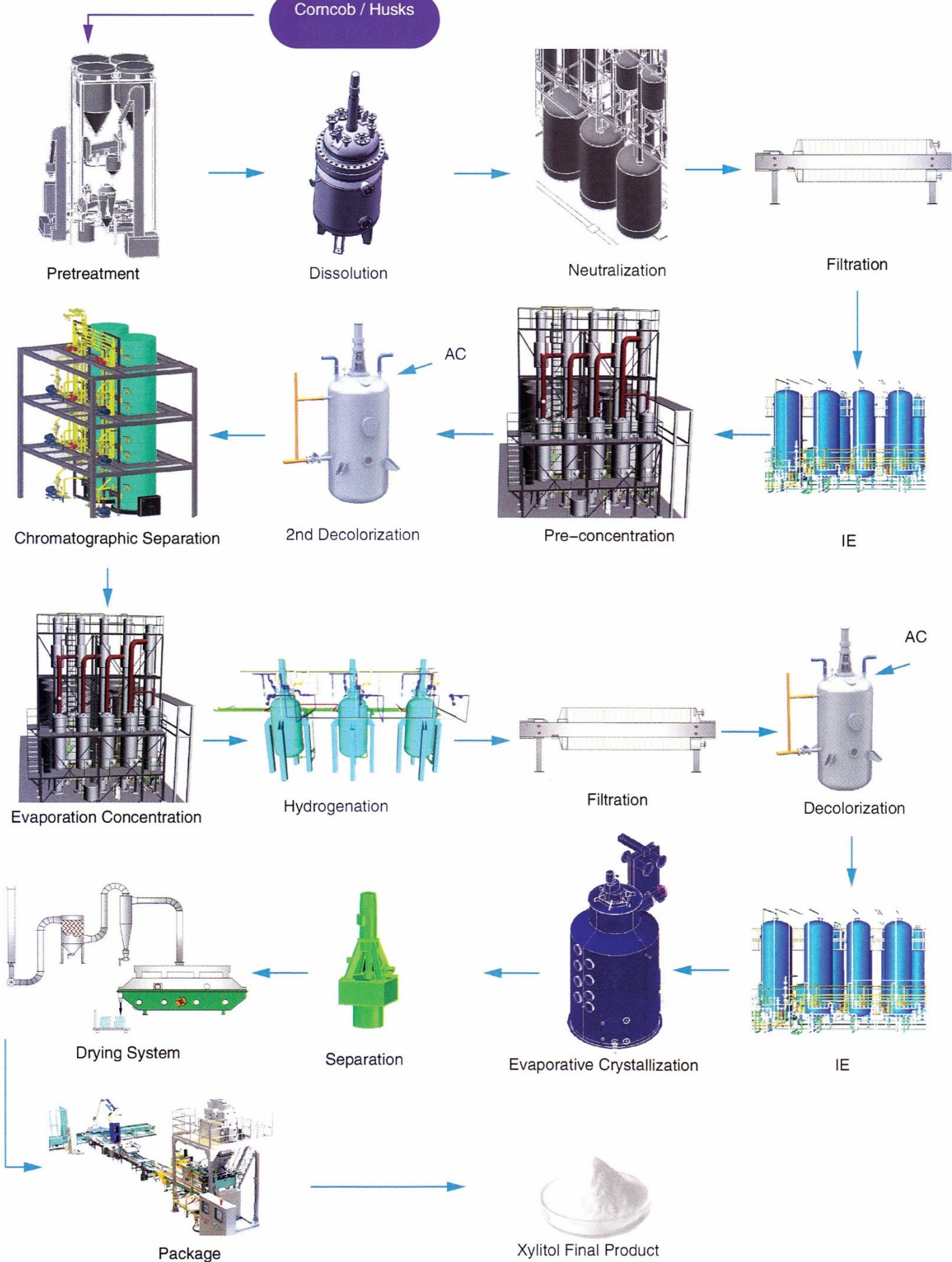
Polydextrose commonly known as water-soluble dietary fiber, has many excellent processing properties and beneficial physiological functions to the body.

Mannitol Process

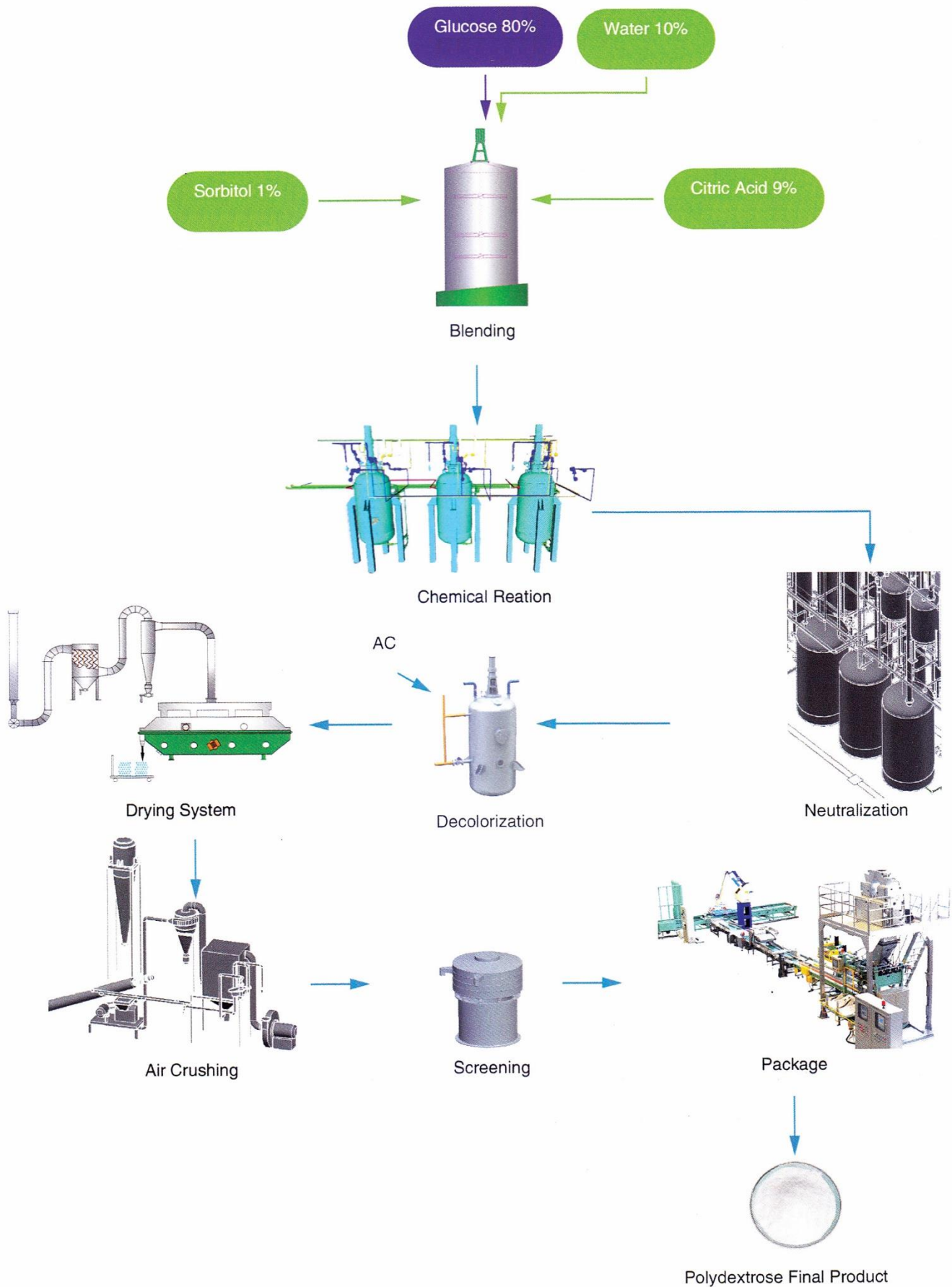


Xylitol Process

Comcob / Husks



Polydextrose Process



Non-dairy Creamer

Non-dairy creamer, also known as creamer, is a new product with refined vegetable oil or hydrogenated vegetable oil, casein, etc. as the main raw materials. Non-dairy creamer is mainly used in the food industry.

Trehalose

Trehalose was once called "the sugar of dreams" and "the sugar of life". Trehalose is a safe and reliable natural sugar.

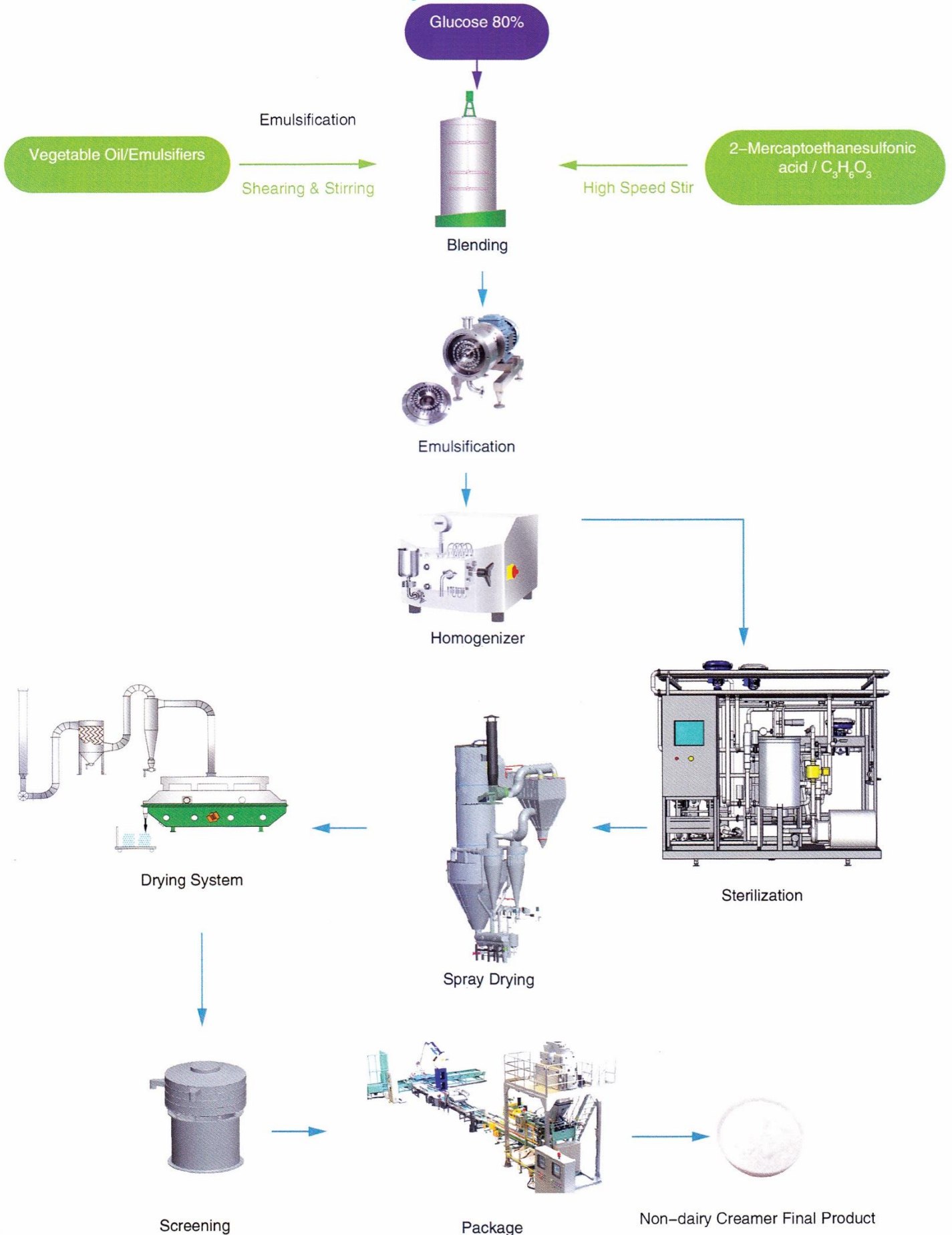
Erythritol

Erythritol is a naturally fermented sweetener. It is the only sugar alcohol product that China officially recognizes as a "zero energy" claim.

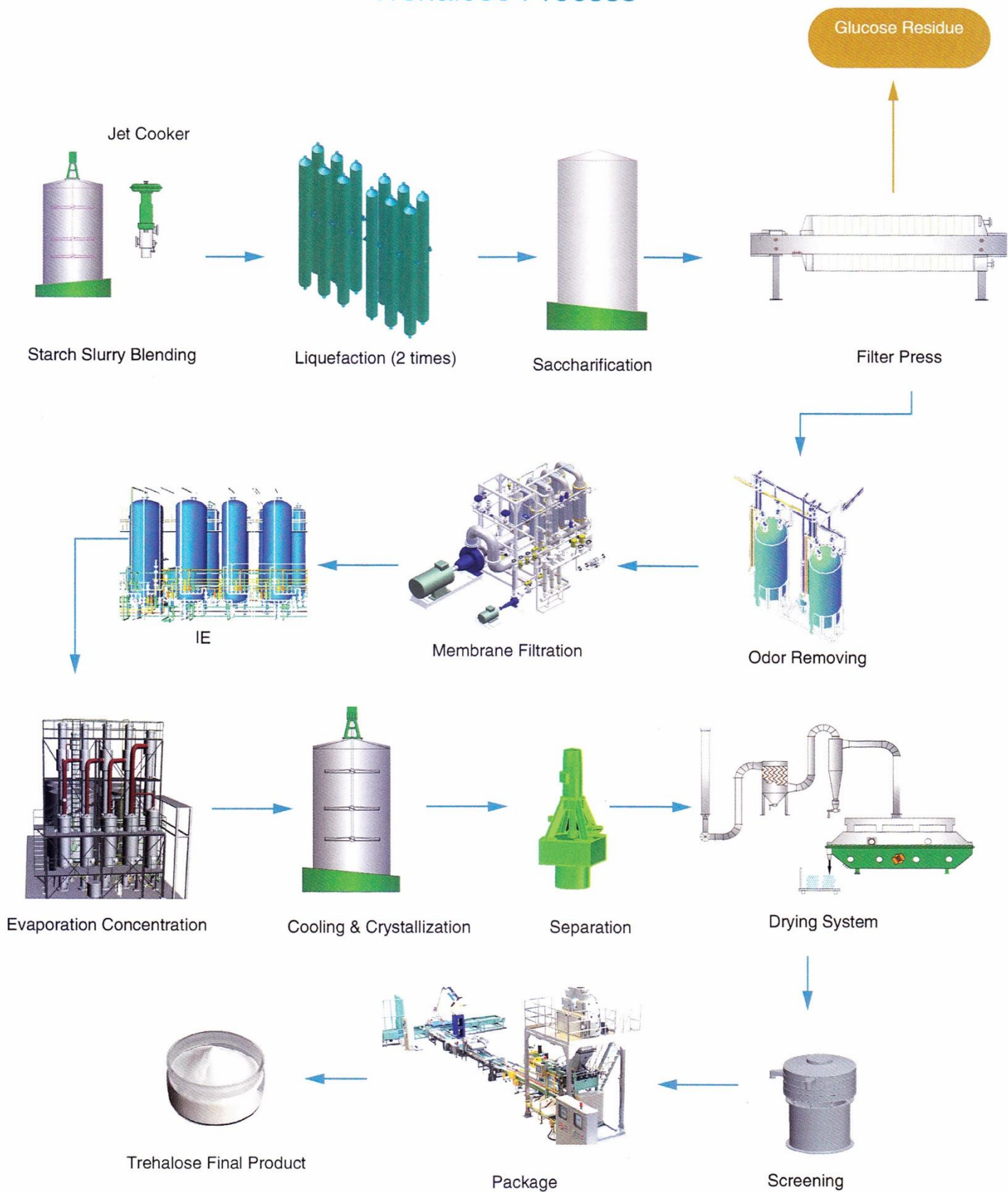
Allulose

D-psicose, also known as Allulose, its chemical formula is $C_6H_{10}O_5$. It is a natural polysaccharide with wide application value. D-psicose is a stable polysaccharide with a filamentous molecular structure. Its effects are reflected in enhancing immunity, anti-inflammatory, regulating blood sugar and blood lipids, and anti-tumor.

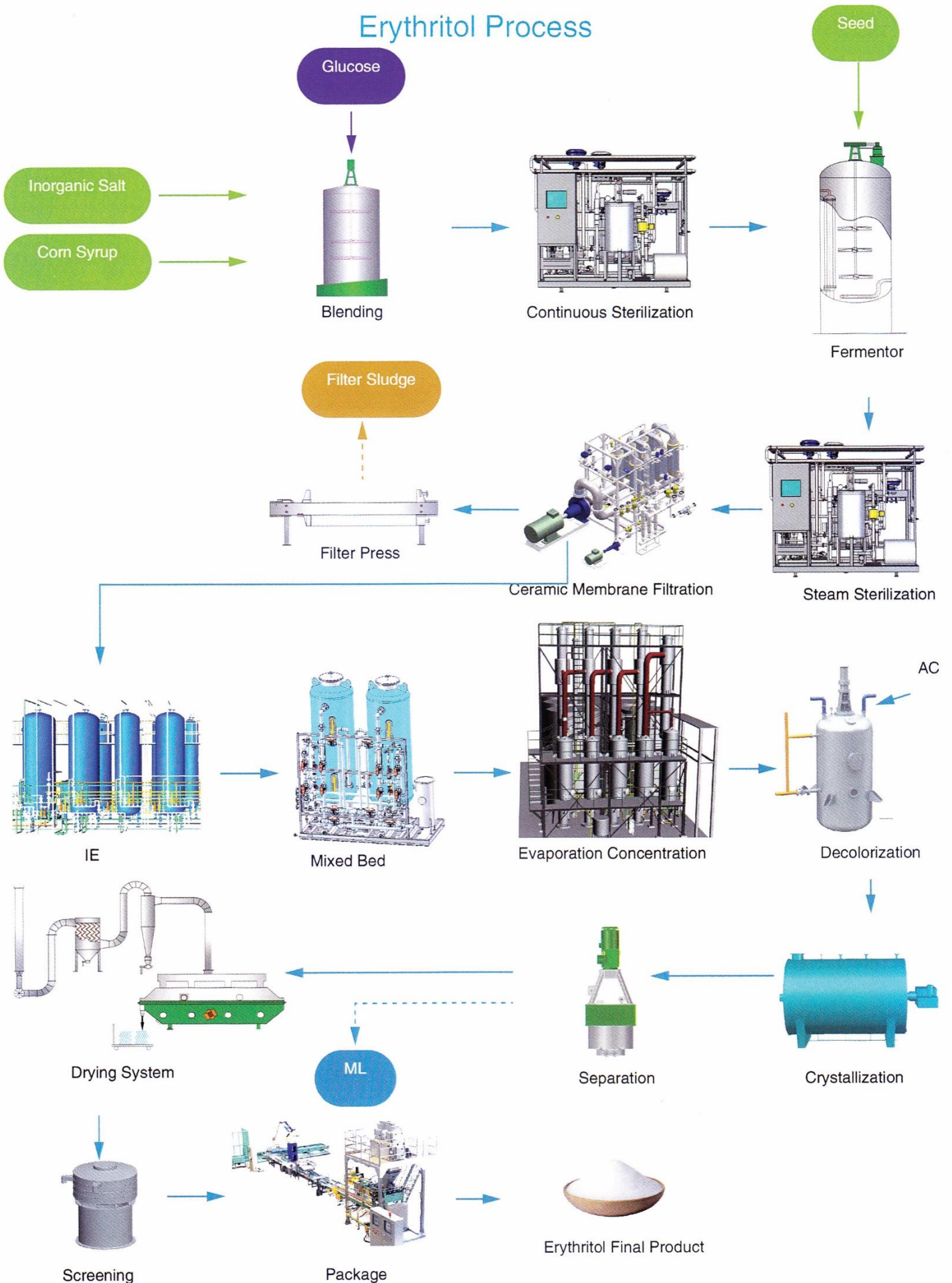
Non-dairy Creamer Process



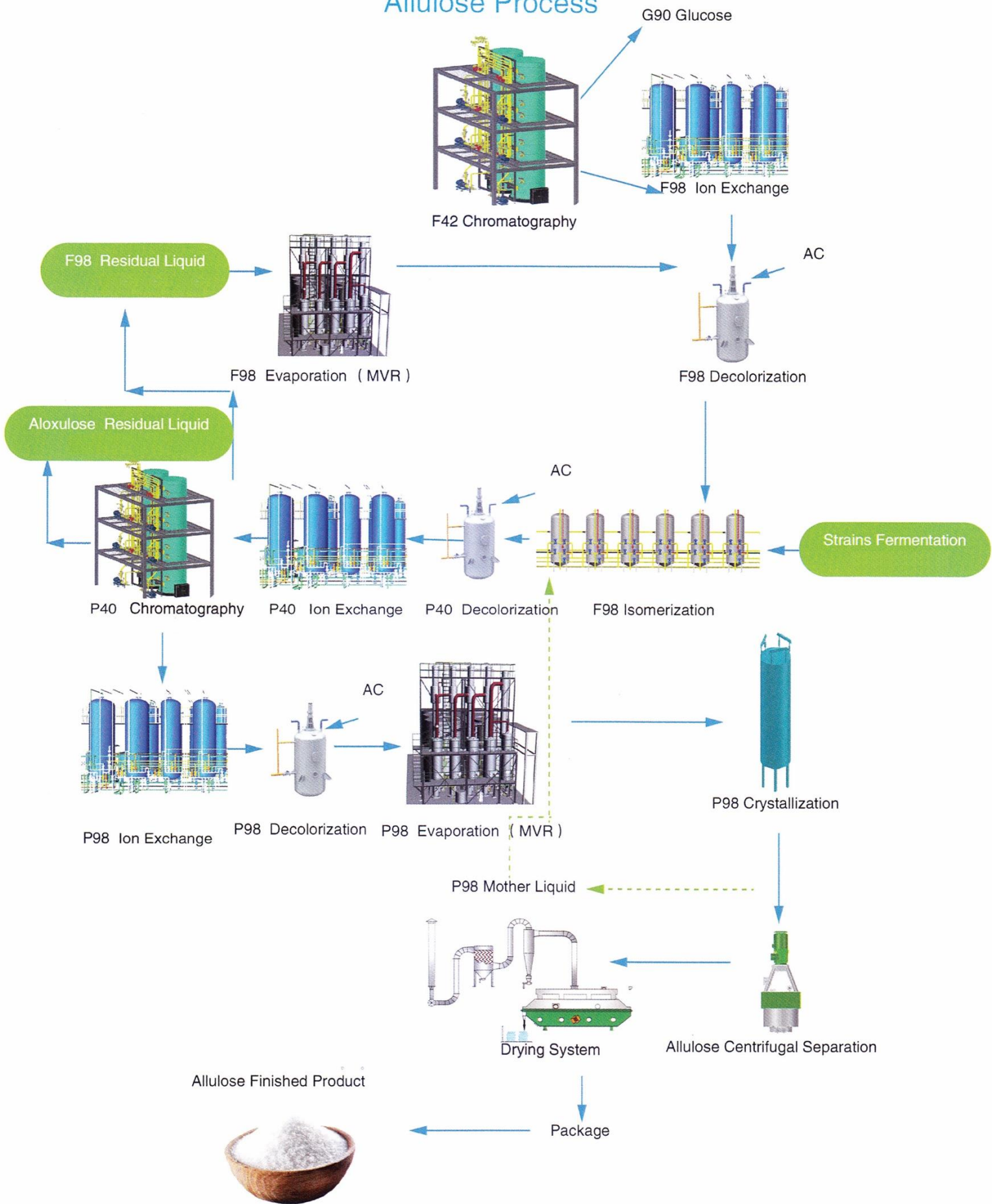
Trehalose Process



Erythritol Process



Allulose Process

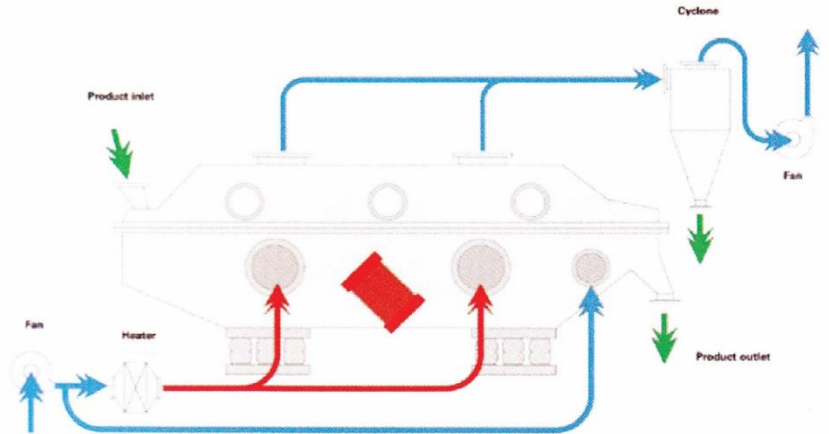


Fluid Bed Dryer

The dryer is widely applied in chemical industry, light industry, pharmaceutical, food, plastic, oil, slag, salt, sugar etc. for drying, cooling and humidifying of powder particle materials.

Technical Features

- It is stable in operation and convenient in maintenance, low noise, long service life.
- Easy to regulate, width, thickness of raw material layer, moving speed and amplitude can be adjusted.
- Less damage to the surface of material. It can be used for drying material that is easy to broken. The work effect will not be affected by irregular material shape.
- Clean operation site. It is effectively prevent the cross pollution between raw material and air because the equipment adapts fully closed structure.
- It has the characteristics of high mechanical efficiency, high thermal efficiency and good energy saving effect. Compared with ordinary dryer, the energy can be saved about 30 ~ 40%.

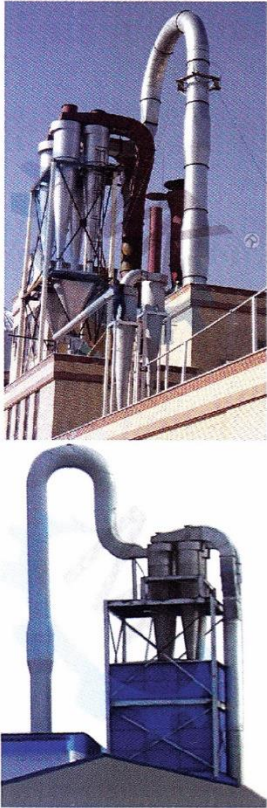


Main Technical Specification

| Model | Area of fluidized-bed | Temp. of air inlet | Temp. of air outlet | Evaporation capacity | Motor power (kW) |
|----------|-----------------------|--------------------|---------------------|----------------------|------------------|
| MKFB-30 | 0.9 | 20-140 | 20-70 | 20-35 | 0.75x2 |
| MKFB-40 | 1.35 | 20-140 | 20-70 | 35-50 | 0.75x2 |
| MKFB-60 | 2.025 | 20-140 | 20-70 | 50-70 | 1.1x2 |
| MKFB-80 | 2.7 | 20-140 | 20-70 | 70-90 | 1.1x2 |
| MKFB-120 | 3.6 | 20-140 | 20-70 | 100-130 | 1.5x2 |
| MKFB-140 | 4.5 | 20-140 | 20-70 | 120-170 | 1.5x2 |
| MKFB-160 | 5.625 | 20-140 | 20-70 | 150-180 | 3.0x2 |
| MKFB-190 | 6.75 | 20-140 | 20-70 | 160-210 | 3.0x2 |
| MKFB-240 | 9.6 | 20-140 | 20-70 | 200-280 | 3.7x2 |
| MKFB-280 | 11.25 | 20-140 | 20-70 | 230-330 | 3.7x2 |
| MKFB-400 | 14.4 | 20-140 | 20-70 | 290-420 | 5.5x2 |

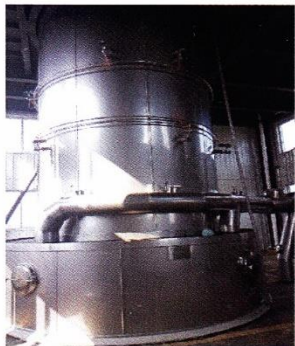
Air Dryer

MKAD air dryer is widely applied in the fields of requiring drying process requirements for starch, protein powder, crystallized glucose and other powdery materials.



Main Technical Specification

| Model | Feed moisture (%) | Product moisture (%) | Capacity (tph) | Power (kW) |
|----------|-------------------|----------------------|----------------|------------|
| MKAD-0.5 | ≤40 | 12-14 | 0.5 | 21.3 |
| MKAD-0.8 | ≤40 | 12-14 | 0.8 | 24.3 |
| MKAD-1 | ≤40 | 12-14 | 1 | 26.6 |
| MKAD-1.2 | ≤40 | 12-14 | 1.2 | 30.1 |
| MKAD-1.6 | ≤40 | 12-14 | 1.6 | 40.6 |
| MKAD-2 | ≤40 | 12-14 | 2 | 47.6 |
| MKAD-2.6 | ≤40 | 12-14 | 2.6 | 59.5 |
| MKAD-3.2 | ≤40 | 12-14 | 3.2 | 75 |
| MKAD-3.6 | ≤40 | 12-14 | 3.6 | 95 |
| MKAD-5 | ≤40 | 12-14 | 5 | 123.4 |
| MKAD-6 | ≤40 | 12-14 | 6 | 170 |
| MKAD-10 | ≤40 | 12-14 | 10 | 223.5 |
| MKAD-15 | ≤40 | 12-14 | 15 | 321 |
| MKAD-20 | ≤40 | 12-14 | 20 | 420 |



Spray Dryer

MKSD series spray dryer is an equipment that can finish drying and granulating at the same time. The granule fineness can be got in accordance with requirements of process by adjusting the pressure & flowrate of the pump and the size of atomizing hole. It is widely used in chemical industry, food industry, pharmaceutical industry and other industries. The dryer can equip with gas burner which applies CNG as fuel to give much clean environment.

Main Technical Specification

| Model | MKSD-50 | MKSD-100 | MKSD-150 | MKSD-200 | MKSD-300 | MKSD-500 | MKSD-1000 |
|------------------------------|-----------|------------|------------|-------------|------------|------------|------------|
| Evaporation capacity (Kg/h) | 50 | 100 | 150 | 200 | 300 | 500 | 1000 |
| Outline dimension (ΦxH) (mm) | 1200x8900 | 1800x11500 | 2200x13500 | 2400x14800 | 2800x15400 | 3400x18800 | 4600x22500 |
| Power (kW) | 8.5 | 14 | 22 | 24 | 30 | 45 | 75 |
| Air input temp. (°C) | | | | 150 ~ 350 | | | |
| Product moisture content (%) | | | | less than 6 | | | |
| Material recovery (%) | | | | > 97 | | | |

Automatic Dual Fluidized Bed Dryer

Advantages of automatic dual fluidized bed:

- High automation reduces possibilities of operation error and ensures continuous operation.
- The combination process of vertical dual fluidized bed and horizontal vibrating fluidized bed, which especially suitable for small and medium-sized crystalline dextrose drying process. Its drying effect is great, particle size is moderate and it is energy-saving.
- The structure of fluidized bed is improved and the yield is high, which leads to the result in economic benefit.
- It adopts high efficiency cyclone and scrubber dust removal process, which minimizes the powder escaping.



Main Technical Specification

| Model | Output of fluidized-bed (m ²) | Temp. of air inlet (°C) | Temp. of air outlet (°C) | Evaporation capacity (Kg/h) | Power of fluidized-bed (kW) |
|----------|---|-------------------------|--------------------------|-----------------------------|-----------------------------|
| MKFB-30 | 0-1 | 70-140 | 40-70 | 0-50 | 0.75x2 |
| MKFB-40 | 1-2 | 70-140 | 40-70 | 50-100 | 0.75x2 |
| MKFB-60 | 2-3 | 70-140 | 40-70 | 100-150 | 1.1x2 |
| MKFB-80 | 3-4 | 70-140 | 40-70 | 150-200 | 1.1x2 |
| MKFB-120 | 4-6 | 70-140 | 40-70 | 200-300 | 1.5x2 |
| MKFB-140 | 6-8 | 70-140 | 40-70 | 300-400 | 1.5x2 |
| MKFB-160 | 8-12 | 70-140 | 40-70 | 400-600 | 3.0x2 |

Pre-coating Vacuum Filter

MKPF series pre-coating rotary vacuum filter is the high efficient solid & liquid separation equipment by adding pre-coating technology to the ordinary drum filter. The equipment can realize automatic control and continuous separation of solid and liquid, and improve the transmittance of filtrate, it is widely used in pharmaceutical industry, food industry, chemical industry, etc.

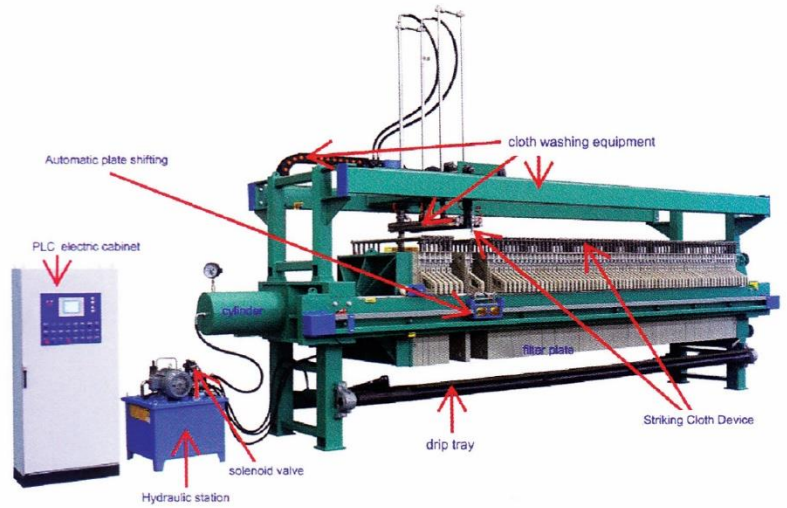


Main Technical Specification

| Model | MKPF-04 | MKPF-10 | MKPF-15 | MKPF-20 | MKPF-25 | MKPF-30 | MKPF-35 | MKPF-40 | MKPF-45 | MKPF-50 | MKPF-60 | MKPF-70 |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Filter area (m ²) | 4 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 70 |
| Liquid glucose DS (%) | 30-35 | | | | | | | | | | | |
| Capacity (m ³ /m ² ·h) | 0.32-0.56 | | | | | | | | | | | |
| Running vacuum (MPa) | 0.04 - 0.06 | | | | | | | | | | | |
| Motor power (kW) | 1.5 | 2.2 | 2.2 | 2.2 | 2.2 | 3 | 3 | 3 | 4 | 4 | 4 | 7.5 |
| Agitator swing times/minute | 21 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Agitator motor power (kW) | 1.5 | 2.2 | 2.2 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| Overall dimension L*W*H (mm) | 2654*2930*1810 | 3862*3150*2087 | 3850*4000*2785 | 4750*4000*2785 | 5135*4000*2785 | 5780*4000*2785 | 5430*5000*3680 | 5966*5000*3680 | 6500*5000*3680 | 7020*5000*3680 | 7510*5000*3680 | 9195*5000*3955 |
| Equipment weight (Kg) | 4300 | 5200 | 5850 | 6550 | 7130 | 8125 | 9560 | 11050 | 12980 | 14680 | 15780 | 19200 |

Plate Filter Press

MKFP series plate filter press is usually used for solid-liquid separation in coal, oil, chemical, textile, food, pharmacy, metallurgy industries etc.. In the fermentation industry, it is used to filter the suspended solid in the fermentation broth. On the basis of several patented technologies, the shaping effect of polypropylene has been enhanced, it features in smooth surface, high intensity, light weight, corrosive proof, innocuous and odorless. The hydraulic device is employed for pressing and releasing the frames and plates. The electrical contact pressure gauge is available to automatically maintain pressure. The whole support frame is made by welded steel with high intensity, so it is able to suffer from high pressure, which provides the machine with stable performance and long life. The equipment can be equipped with PLC, relay control and many other safety-guarding devices, therefore the operation will be automatic and easy to control, and the operator will work safely. Girder is equipped with abrasion-proof nonmetallic tracks, which are formed in one piece. It adopts bridge-type flexible frame. Maximum pressure is 22MPa.



Main Technical Specification

| Model | Filter area (m ²) | Plate size (mm) | Chamber qty. (pcs) | Cake thickness (mm) | Chamber volume (L) | Motor power (kW) |
|----------|-------------------------------|-----------------|--------------------|---------------------|--------------------|------------------|
| MKFP-10 | 5-10 | 500*500 | 12-26 | 25 | 63-126 | 2.2 |
| MKFP-15 | 10-15 | 500*500 | 26-38 | 25 | 126-188 | 2.2 |
| MKFP-20 | 20 | 720*720 | 26 | 30 | 297 | 2.2 |
| MKFP-30 | 30 | 720*720 | 39 | 30 | 452 | 2.2 |
| MKFP-40 | 40 | 720*720 | 51 | 30 | 595 | 2.2 |
| MKFP-50 | 50 | 800*800 | 50 | 30 | 756 | 2.2 |
| MKFP-60 | 60 | 800*800 | 60 | 30 | 907 | 2.2 |
| MKFP-70 | 70 | 800*800 | 70 | 30 | 1059 | 2.2 |
| MKFP-80 | 80 | 900*900 | 63 | 30/32 | 1190/1270 | 2.2 |
| MKFP-100 | 100 | 1000*1000 | 62 | 30/35/40 | 1480/1740/1940 | 2.2 |
| MKFP-120 | 120 | 1000*1000 | 75 | 30/35/40 | 1800/2100/2340 | 2.2 |
| MKFP-150 | 150 | 1250*1250 | 58 | 30/35/40 | 2260/2640/3020 | 4 |
| MKFP-200 | 200 | 1250*1250 | 77 | 30/35/40 | 3020/3520/4020 | 4 |
| MKFP-250 | 250 | 1250*1250 | 95 | 30/35/40 | 3730/4350/4970 | 4 |
| MKFP-300 | 300 | 1500*1500 | 77 | 32/35/40 | 4760/5220/5960 | 5.5 |
| MKFP-400 | 400 | 1500*1500 | 103 | 32/35/40 | 6390/7000/8000 | 5.5 |
| MKFP-500 | 500 | 1500*1500 | 128 | 32/35/40 | 7960/8720/9960 | 5.5 |

Jet Cooker

MKJC series full automatic liquefaction jet cooker is a new type of liquefaction injector, which stands a leading level of the similar products. There is no rusting, no jamming in it. In the steam pressure over than 0.5MPa, the starch can be liquefied by the jet cooker completely, high liquefied substrate concentration, high steam thermal efficiency and high conversion rate of starch .

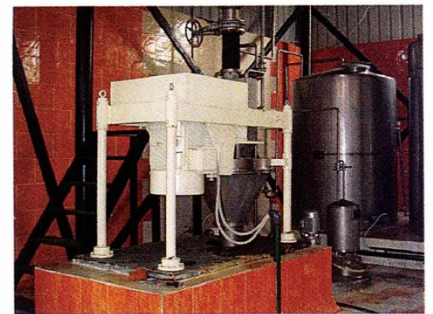


Main Technical Specification

| Model | Feeding flowrate (starch milk) (m ³ /h) | Inlet size | Outlet size | Control mode | |
|----------|---|------------|-------------|--------------|--------|
| | | | | Automatic | Manual |
| MKJC-03 | 3-5 | DN32 | DN25 | ✓ | ✓ |
| MKJC-06 | 6-10 | DN50 | DN40 | ✓ | ✓ |
| MKJC-10 | 10-15 | DN65 | DN50 | ✓ | ✓ |
| MKJC-15 | 15-20 | DN80 | DN65 | ✓ | ✓ |
| MKJC-20 | 20-30 | DN100 | DN80 | ✓ | ✓ |
| MKJC-30 | 30-40 | DN100 | DN80 | ✓ | ✓ |
| MKJC-40 | 40-50 | DN125 | DN100 | ✓ | ✓ |
| MKJC-50 | 50-60 | DN125 | DN100 | ✓ | ✓ |
| MKJC-80 | 60-80 | DN150 | DN125 | ✓ | ✓ |
| MKJC-100 | 80-120 | DN200 | DN150 | ✓ | ✓ |

Pin Mill (For Rice Glucose)

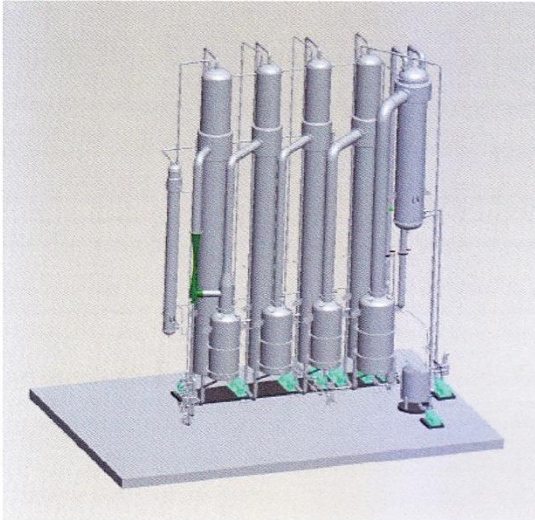
MKPM series pin mill is widely used to rice glucose, corn and other industries. The material enters into the pulverizing chamber from the upper feeding hole and the thin slurry goes into the rotor center through the pipes on the right and left side, then the material and thin slurry will be dispersed around in the working chamber by centrifugal force and impacted violently and repeatedly by a rotating needle and the fixed needle, which separates most of the starch and fiber. As the fiber is smashed incompletely during the milling, most of the fiber will be made into thin pieces. The paste produced by the pin mill is discharged from the outlet, then finish the fine milling process.



Main Technical Specification

| Model | Rotor dia(mm) | Rotation speed (rpm) | Rice input (t/h) | Main motor power (kW) | Oil pump power (kW) | Overall dimension L*W*H (mm) | Equipment weight (Kg) |
|-----------|---------------|----------------------|------------------|-----------------------|---------------------|------------------------------|-----------------------|
| MKPM-685 | 690 | 3750 | 4-7 | 55-75 | 0.75 | 2300*1310*1760 | 1800 |
| MKPM-1000 | 1000 | 3137 | 9-12 | 200-220 | 0.75 | 2850*1650*2240 | 4500 |

Tube and Shell Evaporator



MKTE series multi-stage falling film evaporator concentrates the solution by means of vaporizing the thin solution through film-falling principle. It adopts continuous production and its features in high concentration ratio (1/5–1/10), large viscosity scope (> 400CP), good heat-transferring effect, large processing capacity etc. In this case, it can be introduced on vaporizing materials which are high heating sensibility, high concentration, high viscosity and corrosive. Therefore, it is widely used in fermentation, food, milk, alcohol and starch industry. The equipment with a higher heat-transferring ratio, so the temperature difference requested is small. It can be combined into two stage, three stage, four stage, or multi-stage evaporator system on the basis of different material characteristics and evaporating concentration. In addition, it can be used as waste-heat evaporator with the resources of waste steam from bundle dryer or other heating resources with low thermal value such as condensed steam. In this way, raw steam consumption can be greatly reduced for energy saving. It is economically beneficial when waste steam can be completely used and raw steam is saved.

Main Technical Specification

| Item | Model Parameter | MKMZ6 | MKMZ10 | MKMZ15 | MKMZ18 | MKMZ20 | MKMZ25 | MKMZ30 | MKMZ35 | MKMZ40 | MKMZ50 |
|------------------------------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Max evaporation (kg/h) | water | 6000 | 10000 | 15000 | 18000 | 20000 | 25000 | 30000 | 35000 | 40000 | 50000 |
| Operating pressure(Mpa) | | 0.4–0.6 | 0.4–0.6 | 0.4–0.6 | 0.4–0.6 | 0.4–0.6 | 0.4–0.6 | 0.4–0.6 | 0.4–0.6 | 0.4–0.6 | 0.4–0.6 |
| vacuum degree (Mpa) | I Effect | -0.016 | -0.016 | -0.02 | -0.016 | -0.016 | -0.062 | -0.05 | -0.069 | -0.043 | -0.043 |
| vacuum degree (Mpa) | II Effect | -0.043 | -0.043 | -0.016 | -0.043 | -0.043 | -0.069 | -0.063 | -0.08 | -0.062 | -0.062 |
| vacuum degree (Mpa) | III Effect | -0.79 | -0.79 | -0.053 | -0.079 | -0.079 | -0.079 | -0.079 | -0.085 | -0.079 | -0.079 |
| vacuum degree (Mpa) | IV Effect | — | — | -0.079 | — | — | -0.09 | -0.09 | — | -0.09 | -0.09 |
| Vapourization temperature (° C) | I Effect | 96 | 96 | 104 | 96 | 96 | 76 | 83 | 70 | 85 | 85 |
| Vapourization temperature (° C) | II Effect | 86 | 86 | 96 | 86 | 86 | 71 | 72 | 60 | 75 | 76 |
| Vapourization temperature (° C) | III Effect | 61 | 61 | 80 | 61 | 61 | 61 | 62 | 50 | 61 | 65 |
| Vapourization temperature (° C) | IV Effect | 48 | — | 61 | — | 48 | 48 | 48 | — | 48 | 55 |
| Input concentration (%) | | 4–8 | 4–8 | 30 | 6–8 | 4 | 4 | 4 | 6 | 4 | 5 |
| Output concentration(%) | | 48 | 48 | 74 | 48 | 30 | 30 | 30 | 46 | 30 | 30–35 |
| Gas consumption (T/h) | | 1.5 | 1.5 | 4 | 5.27 | +2 | +2 | +3–4 | | +3 | +4–5 |
| Evaporation area (M ²) | | 260 | 435 | 530 | 880 | 2000 | 2500 | 3000 | 3350 | 4200 | 5400 |
| Pump power(kw) | | 65 | 100 | 62.5 | 62.5 | 300 | 300 | 265 | 280 | 411 | 520 |

Plate Evaporator

MKPE series evaporator is multi-effect falling film evaporator. The flowchart is reasonable and the effect of energy conservation is remarkable. For five-effect evaporator, if 1kg water is evaporated, the steam consumption will be 0.25kg. If the device adds the TVR for the secondary steam, when the compression ratio is 1:1, the evaporation capacity will equal to adding effect of one effect. At this situation, if 1kg water is evaporated, the steam consumption will be 0.22kg. If the device adds MVR for the secondary steam, the steam consumption will reach to zero. It is high effective, closed, fast and low temperature evaporation. It is especially suitable for the concentration of food grade material which is high protein and strong thermosensitive. It can ensure that the color, flavor and taste of raw material will be remained after evaporation. It is controlled by PLC adding touch panel and computer, which can reach to automatic operation. The operation of the device is flexible. The capacity of the device can be adjusted by adding or reducing the plate. It takes plate constructure, convenient installation and maintaining, small area, low height and easy operation.



Main Technical Specification

| Model | MKPE-3 | MKPE-6 | MKPE-9 | MKPE-10 | MKPE-12 | MKPE-15 | MKPE-20 | MKPE-30 | MKPE-40 | MKPE-50 | MKPE-60 |
|------------------------|----------------------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| Max evaporation (Kg/h) | 3000 | 6000 | 9000 | 10000 | 12000 | 15000 | 20000 | 30000 | 40000 | 50000 | 60000 |
| Steam pres. (MPa) | 0.6-1.0 | | | | | | | | | | |
| Input DS(%) | 26-30(glucose syrup) | | | | | | | | | | |
| Output DS(%) | 70-75(glucose syrup) | | | | | | | | | | |

Top-suspending Centrifuge

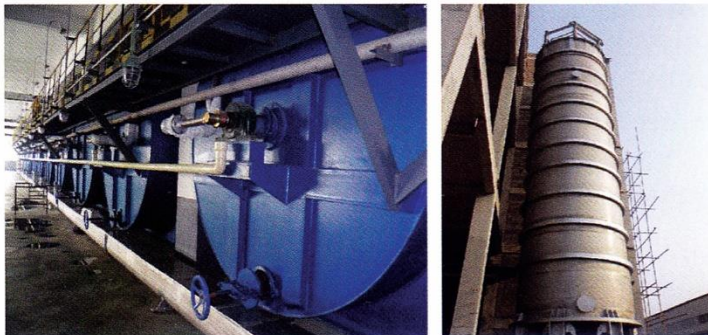
MKTC full-automatic suspended centrifuge is a fully automatic mechanical un-loading centrifuge. The material for all parts contacting with material and water, steam pipe line and so on are stainless steel or corrosion resistant material to ensure the cleaning of the product. Pneumatic mechanical scraper gives the safe discharge, which is suitable for the separation of crystal suspension liquid. It is beneficial to ensure the integrity of the crystal. MKTC type centrifuge is mainly used for the solid and liquid separation of crystal glucose massecuite or similar high viscosity and high concentration material in sugar industry.



Main Technical Specification

| Model | Drum inner dia. (mm) | Max. material layer thickness (mm) | Max. cycle index (h-1) | Max. speed of revolution (rpm) | Max. separation factor-Fr | Main motor power (kW) | Overall dimension L*W*H (mm) |
|-----------|----------------------|------------------------------------|------------------------|--------------------------------|---------------------------|-----------------------|------------------------------|
| MKTC-1300 | 1420 | 225 | 22 | 1330 | 1350 | 90-160 | 1950*1950*4329 |
| MKTC-1500 | 1500 | 220 | 22 | 1270 | 1358 | 110-200 | 2190*2190*4800 |
| MKTC-1750 | 1600 | 220 | 20 | 1230 | 1358 | 132-250 | 2190*2190*4780 |

Crystallizer



MKCL Crystallizer is cooling crystallizing equipment. During the work process, crystal slurry with a certain saturation level is injected from the feeding port on the upper part of the crystallizer, gradually cooling down under the action of cooling water, and the crystals gradually grow to complete the crystallization process. It is widely used in the crystallization of chemical products such as glucose solution, MSG, xylose, xylitol, and salts in

Main Technical Specification

| Model | MKCL-10 | MKCL-20 | MKCL-30 | MKCL-36 | MKCL-40 | MKCL-45 | MKCL-50 |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Volume (m³) | 10 | 20 | 30 | 36 | 40 | 45 | 50 |
| Input DS(%) | 70-75 | 70-75 | 70-75 | 70-75 | 70-75 | 70-75 | 70-75 |
| Main motor power (kW) | 7.5 | 3 | 4 | 5.5 | 5.5 | 7.5 | 5.5 |
| Agitator rotation speed (r/min) | 2-10 | 0.5-0.8 | 0.5-0.8 | 0.5-0.8 | 0.5-0.8 | 0.5-0.8 | 0.5-0.8 |
| Overall dimension L*W*H (mm) | 3905*2600*3145 | 5905*2600*3145 | 6680*2980*3545 | 7165*3250*3833 | 6305*3600*4045 | 6805*3600*4045 | 7305*3600*4045 |
| Equipment weight (Kg) | 8610 | 9960 | 15200 | 16230 | 17100 | 18420 | 19750 |



Ion Exchange System

According to characteristics of functional radicle it brought, ion exchange resin can be categorized as cation resin, anion resin and other resin.

Cation resin is a kind of polymer with combination of sulphur acid ($-SO_3H$), carboxyl acid ($-COOH$) and other acid functional radicle on skeleton. When dipped into water, exchangeable part of this resin can be ionized similarly to common acid.

Anion exchange resin is a kind of compound combined with hydroxide radicle on skeleton. It features strong alkali nature, and named as anion exchange resin.

According to different skeleton structure, Ion exchange resin can be categorized as gelatin type and macro porous type.



The ion exchange system is widely applied to refinery process of glucose, maltose, dextrose, fructose, sorbitol and most of pharmaceutical and fermentation products.

It can be designed as manual and fully automatic system such as column pairs, rotary disc and valve array distribution.





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