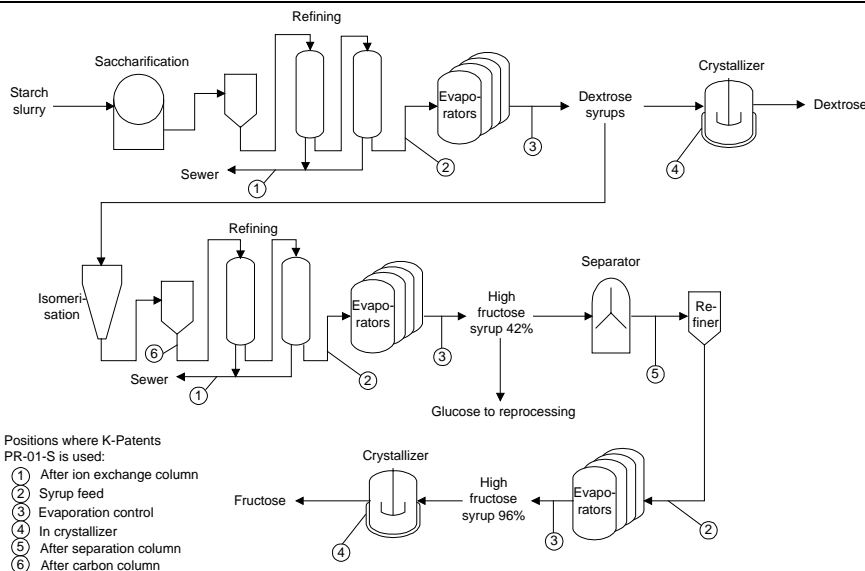


Starch Sweeteners Process

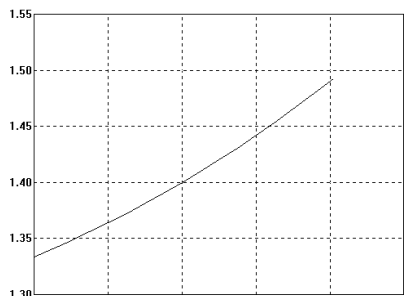


Starch Sweeteners

Soluble in
water, alcohol, ether

Typical end products
See APN 1.03.00: Application

Chemical curve: R.I. per Conc%b.w.



R.I. Ref. temp. 20°C

See also

- Starch Sweeteners 1.03.00
- Starch Sweeteners: Ion Exchanger 1.03.02
- Starch Sweeteners: Evaporator 1.03.03
- Starch Sweeteners: Crystallizer 1.03.04
- Starch Sweeteners: Separation 1.03.05
- Starch Sweeteners: Carbon Column 1.03.06

Glucose syrup production

Glucose syrup is produced by acid hydrolysis. The basic steps in the process consist of (1) acidification, (2) conversion and neutralization, (3) refining and (4) evaporation. Starch slurry is first acidified in the converter. The acidified starch is converted at a

high temperature in the mixture of glucose, maltose and higher saccharides.

Dextrose syrup production

Dextrose syrup is produced by enzyme hydrolysis. The basic steps in the process consist of (1) liquefaction, (2) saccharification, (3) refining and (4) evaporation. The purification process comprises the separation of impurities, decolourization with aid of activated carbon and elimination of all salts in ion exchangers. The demineralized product is evaporated to the degree of concentration required for further processing.

High fructose corn syrup production (42% HFCS)

High fructose corn syrup (HFCS) can be produced from dextrose syrup by using an isomerization process. The basic step in the process consists of (1) isomerization, (2) refining and (3) evaporation. Usually, purified dextrose syrup is fed through isomerization reactors filled with the immobilized enzyme. The rate of flow is such as to produce isosyrup containing 42% fructose.

High fructose corn syrup production (96% HFCS)

Fructose syrup can be produced from high dextrose syrup by using a chromatographic separation process. Typically the largest quantity of fructose is blended with high fructose corn syrup to produce enriched fructose syrup. The basic steps in the process consist of (1) chromatographic separation, (2) refining and (3) evaporation.

Enriched fructose corn syrup production (55% HFCS)

Enriched fructose syrup can be made from high fructose corn syrup by two different processes: blending of HFCS with fructose solution or crystallization of HFS and separation.

Sorbitol production

Sorbitol can be produced by catalytic hydrogenation of dextrose. The basic steps in the process consist of (1) hydrogenation, (2) catalyst separation, (3) refining and (4) evaporation to a dry substance content of 70%.