

Bestion™ Ion Exchange Resin for Sugar and Sweeteners Application

Sucrose is an indispensable sweetener and nutrient in human life. There are two main types of sugar production at home and abroad: one is that sugar cane or sugar beet is directly produced into white sugar, that is, cultivated land sugar, and the other is made of raw sugar and then dissolved. Refined into white sugar, with the improvement of people's living standards, the demand for refined white sugar is getting higher and higher, and the color value is an important indicator in sugar factory inspection. The problem of decolorization has always been one of the problems in the sugar industry.

Ion exchange technology plays an important role in the sugar industry. Especially in the production of refined and advanced edible syrups, the sugar liquid can be decolorized, desalted, delimed, etc., so that the sugar liquid can be purified



蔗糖是人类生活中不可缺少的甜味剂和营养剂，国内外制糖工艺主要有两种：一是由甘蔗或甜菜直接生产成白糖即耕地白糖，二是先制成原糖，再回溶精制成白糖，随着人们生活水平的提高，精制白糖的需求量越来越高，色值是糖厂检验中的一个重要指标，脱色问题历来是制糖工业中的难题之一。

离子交换技术在制糖工业中发挥着重要的作用，特别是精制和高级食用糖浆的生产上，可以对糖液进行脱色，脱盐，脱灰等，从而使糖液得以纯化

Process and Steps for Sugar Decolorization

1. **Juice extraction:** The sugar cane is pressed through a juice extraction device to obtain sugar cane juice.
2. **Pretreatment:** The sugar cane juice is pretreated by a filtering device to remove larger bagasse
3. **Microfiltration Membrane Filtration:** the pretreated sugar cane juice is filtered through a microfiltration membrane to obtain a sucrose juice clear solution
4. **Preconcentration:** the sucrose juice supernatant is sent to a pre-concentration device for preliminary preconcentration
5. **Ion exchange decolorization:** ion exchange decolorization of the pre-concentrated sucrose juice with an ion exchange resin
6. **Concentration:** the sucrose juice obtained in step F is sent to an evaporator for concentration, and the sugar liquid is concentrated to a hammer of 65-75 to obtain a sucrose concentrate
7. **Crystallization:** when the sugar liquid is concentrated to excessive saturation, seeding, slowly cooling and crystallization
8. **Centrifugation:** centrifugation of sucrose crystals by a centrifuge
9. **Drying:** The blast is dried to obtain a finished product.

Decolorized Sucrose solutions



糖液精制应用 Sugar liquor refining application

Type	Typical Application
SS981	适用于稀糖液软化和糖液蒸发前的脱矿，尤适于甜菜糖和 NRS 软化工艺 Suitable for softening diluted sugar juice, and demineralization before evaporation; especially suitable for beet sugar and NRS softening process
SS991	糖液软化、脱灰和脱矿应用，更适用于浓糖液的 Gryllus 和 Quentin 软化工艺。 The sugar liquid softening, deashing and demineralization, much more suitable for the Gryllus and Quentin process of concentrated sugar syrup.
SSM91	应用于多种糖等脱矿、脱灰。适用于浓糖液的 Gryllus 软化工艺，也适于 Quentin 和 NRS 软化。 Applied in the deashing and demineralization of many sugar. Suitable for Gryllus process and also suitable for Quentin and NRS process.
SSM99	应用于多种糖的脱矿、脱灰及软化过程。通常与 SS841OH 作为混床连用。 Applied in the deashing, demineralization and softening of many sugar. Combine with SS841OH as the polishing mixed bed.
SS521	适合浓糖液脱色及去除有机物 Suitable for decolorization and organic matter removal of concentrated sugar juice
SSM83	浓糖液的脱色。常与 SS521 联用。 Decolorization of concentrated sugar juice. Combine with SS841OH as usual
SS802	糖液脱矿，脱色，可与 SSM81 连用。 Demineralization, decolorization of sugar juice. Combine with SSM81 as usual
SS801	糖液脱矿、脱色、脱灰，味精脱色，蔗糖中高果糖浆和糖的回收 Demineralization, deashing and decolorization of sugar juice. Decolorization of MSG. Recovery of high fructose syrup in cane sugar syrups
SSM81	应用于多种糖的脱矿、脱灰及软化过程。 Applied in the deashing, demineralization and softening of many sugars.
SSM82	应用于多种糖的脱矿、脱灰过程。 Applied in the deashing, demineralization of many sugars.
SSM66	糖液脱矿，脱色，可与 SSM81 连用脱矿 Demineralization, decolorization of sugar juice. Combine with SSM81 as usual
SSM84	糖液脱色，通常放在 SS521 的末端 The decolorization of sugar juice, usually as a refined resin placed after SS521
SS831	糖液脱矿、脱色，可放在 SSM84 末端 The decolorization and demineralization of sugar juice, usually as a refined resin placed after SSM84
SS821	糖液脱矿，有机大分子可逆提取 Sugar liquid demineralization, reversible extraction of organic macromolecules
SS531	稀糖液脱矿，糖液脱色、脱灰、脱酸 Dilute sugar solution demineralization, sugar solution decolorization, deashing, deacidification
SSA31	作为糖液和甜味剂颜色、口感、气味的最终抛光 Final polishing of the color, taste and smell of sugar juice
SS803	糖液脱矿 Sugar juice demineralization

SS511	糖液脱矿 Sugar juice demineralization
SS941	蔗糖分子转化为果糖和葡萄糖 Sucrose molecules are converted to fructose and glucose
SS86	应用于蔗糖除盐 Sucrose demineralization
SSM911	应用于甜菜糖液软化 Beet sugar softening
SSM912	应用于蔗糖除盐 Sucrose demineralization
SSM811	应用于味精脱色 Decolorization of MSG
AB101	去除糖液中的高分子量色素、染料、杀虫剂等多种有机物 Removal of high molecular weight pigments, dyes, pesticides and other organic substances in sugar juice
AB102	去除糖液中的中高分子量色素 Removal of high molecular weight pigment in sugar solution

色谱分离 chromatographic separation

Type	Typical Application
CHR	主要应用于甜菜碱纯化，氨基酸净化，模拟移动床(SMB)色谱法。 Mainly used in betaine purification, amino acid purification, simulation of moving bed (SMB) chromatography.
CHR-NA	糖色谱分离，如从糖浆中的离子排阻 Chromatographic separation of sugars, such as ion exclusion from syrup
CHR-Ca	分馏 42 高果糖玉米糖浆，甘露糖醇，山梨糖醇等糖和甜味剂 Fractionation 42 high fructose corn syrup, mannitol, sorbitol and other sugars and sweeteners
CHR-MK	糖色谱分离 Sugar chromatographic separation
CHR-K	K 型均匀颗粒状色谱分离树脂，主要应用于模拟移动床色谱法提纯甜菜碱。右旋葡萄糖、甜菜糖、甜菜糖浆分馏 K form uniform particle chromatography separation resin, mainly used in simulation of moving bed chromatography purification of betaine. Fractionation of dextrose, beet sugar and beet syrup
CHA	与 CHR 一起用于色谱法分离物质。可用于离子交换柱和工业装置。分离离子及可电离物质 Used with CHR for chromatographic separation of substances. It can be used in ion exchange column and industrial device. Separate ions and ionizable substances
CHA-S	糖色谱分离，木糖富集，纤维素水解，用于模拟移动床色谱系统 Sugar chromatographic separation, xylose enrichment, cellulose hydrolysis, used to simulate moving bed chromatographic system
CHM-60	糖色谱分离

CH54	甜菜糖分离 Beet sugar separation
CHR-Ca/K	高果糖浆分离, 玉米糖和麦芽糖色谱分离, 甜菜糖分离, 葡萄糖分离 High fructose syrup separation, corn sugar and maltose chromatography separation, sugar beet separation, glucose separation
CH60-Ca/K	高果糖浆分离, 葡萄糖分离, 糖浆脱糖, 甜菜糖分离, 糖醇分离 Separation of high fructose syrup, glucose separation, syrup desugar, sugar beet separation, sugar alcohol separation
CH57-Ca	高果糖浆分离, 高纯果糖分离, 糖醇分离, 多元醇分离 High fructose syrup separation, high - purity fructose separation, sugar alcohol separation, polyol separation
CH51-Ca/K	高纯果糖分离, 糖醇分离, 多元醇分离, 难于分离的高价值甜味剂分离 Separation of high-purity fructose, separation of sugar alcohol, separation of polyols, difficult separation of high-value sweeteners
CH50	麦芽糖、苏氨酸分馏 Maltose, threonine fractionation
CH50-Ca	高果糖浆分离 High fructose syrup separation
CH59	高果糖浆分离, 玉米糖和麦芽糖色谱分离 Separation of high fructose syrup and chromatographic separation of corn sugar and maltose
CH52-Ca	高果糖浆分离 High fructose syrup separation
CH44-Ca	高果糖浆分离 High fructose syrup separation
CH42-Ca	高果糖浆分离 High fructose syrup separation