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DOWEX™ OPTIPORE™ SD-2 Adsorbent

Polymeric Adsorbent for Sucrose and Other Sweetener Applications

Applications

DOWEX™ OPTIPORE™ SD-2 adsorbent is an adsorbent with a high specific surface area and high porosity which shows exceptional mechanical, thermal and chemical stability. It is specially designed for decolorization as well as taste and odor removal in sweetener applications and complies with the U.S. Food, Drug and Cosmetic Act as amended under Food Additive Regulation 21 CFR 173.25.

This adsorbent has similar pore size distribution and adsorption properties to activated carbon so that it can be used as a direct replacement for carbon in many sweeteners applications. DOWEX OPTIPORE SD-2 has the additional advantage of containing macropores which improve the bulk movement of solutions in and out of the bead. The resulting improvement in kinetics leads to faster production flow rates and smaller beds.

The adsorbent is lightly functionalized with weak base groups to provide a hydrophilic character giving the adsorbent good wettability and compatibility with acid and base regenerants. Regeneration requires only dilute caustic, dilute acid, and hot water.

More detailed information on the use of DOWEX OPTIPORE SD-2 adsorbent in your particular application can be obtained from your Dow technical contact or from your Dow sales representative.

Product Specifications

Product	Type	Matrix	Functional group
DOWEX OPTIPORE SD-2 Adsorbent	Adsorbent	Macroporous styrene-divinylbenzene copolymer	Tertiary amine

General Properties

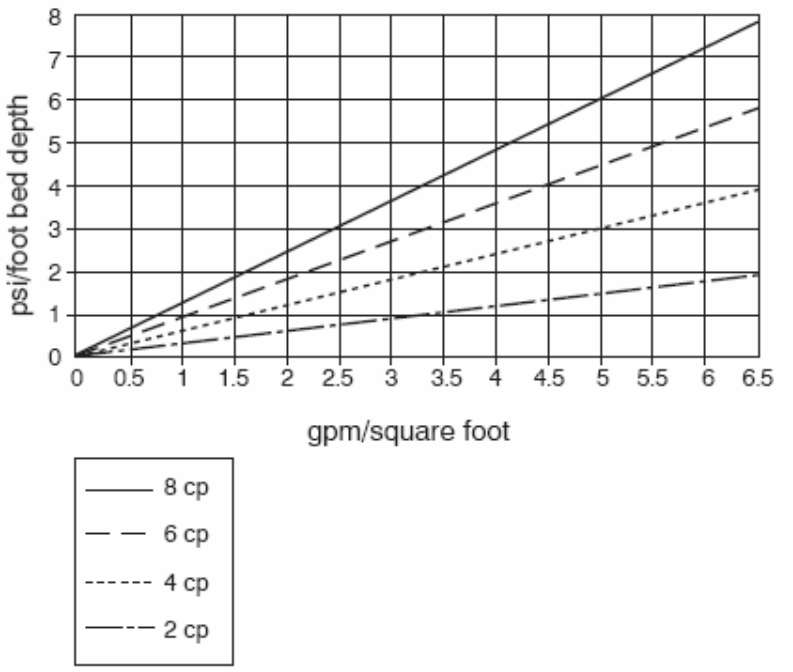
Dry weight capacity	0.8 meq/g
Typical surface area	800 m^2/g
Average pore diameter	50 Angstrom
Water content (%)	50 - 62
Particle size:	
> 1,190 µm	≤ 2%
< 297 µm (total)	≤ 3%
< 210 µm	0.3% max.
< 105 µm	0.0% max.
Swelling, max.	5%
Sphericity, min.	90%
Density	1.04 g/mL
Shipping weight**	670 g/L (42 lb/ft^3)

** As per the backwashed and settled density of the resin, determined by ASTM D-2187.

Typical Operating Condition Ranges (dependent on application)

Operating temperature	50 - 85°C
Operating pH	3 - 8.5
Service/regeneration flow rates	2 - 6 BV/hr
Regenerant type	NaOH, HCl or H_2SO_4

Figure 1. Pressure Drop



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[57] **Abstract**

A process for decolorizing an aqueous sugar solution by contacting the solution with an absorbent resin, wherein the adsorbent resin is a macroporous copolymer being post-crosslinked in a swollen state in the presence of a Friedel-Crafts catalyst and functionalized with hydrophilic groups prior to contact with aqueous sugar solution.

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