



Product Data Sheet

AmberLite™ SD-2 Polymeric Adsorbent

Food-grade, Macroporous, Adsorbent Resin for Sucrose and Other Sweetener Applications

Description

AmberLite™ SD-2 Polymeric Adsorbent has a high specific surface area and high porosity and exceptional mechanical, thermal, and chemical stability. It is specially designed for decolorization as well as taste and odor removal in sweetener applications. AmberLite™ SD-2 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 sweetener applications. AmberLite™ 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 flowrates and smaller beds.

The adsorbent is lightly functionalized with weak base groups to provide a hydrophilic character that gives 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 AmberLite™ SD-2 adsorbent for a particular application can be obtained from your DuPont technical contact or sales representative.

Applications

- Sweetener decolorization
- Taste and odor removal

Typical Properties

Physical Properties

Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Adsorbent
Functional Group	Tertiary amine
Physical Form	Tan to reddish brown, opaque, spherical beads

Nitrogen BET

Surface Area	~800 m ² /g
Average Pore Diameter	~50 Å

Chemical Properties

Ionic Form as Shipped	Free base (FB)
Dry Weight Capacity	0.8 eq/kg
Water Retention Capacity	50 – 62%

Particle Size §

< 105 µm	≤ 0.05%
< 210 µm	≤ 0.3%
< 300 µm	≤ 1%
> 1180 µm	≤ 2%

Stability

Swelling	FB → HCl ≤ 5%
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Density

Particle Density	1.04 g/mL
Shipping Weight	670 g/L

§ For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 45-D00954-en).

Suggested Operating Conditions

Operating Temperature Range	50 – 85°C (122 – 185°F)
pH Range	3 – 8.5
Flowrates	
Service	2 – 6 BV*/h
Regeneration	2 – 6 BV/h
Regenerants	<ul style="list-style-type: none"> • NaOH • HCl • H₂SO₄

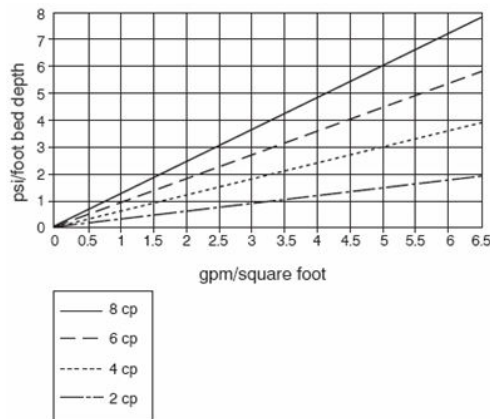
* 1 BV (Bed Volume) = 1 m³ solution per m³ resin or 7.5 gal per ft³ resin

Hydraulic Characteristics

Estimated pressure drop for AmberLite™ SD-2 Polymeric Adsorbent as a function of service flowrate and viscosity is shown in Figure 1. These pressure drop expectations are valid at the start of the service run with clean feed and a well-classified bed.

Figure 1: Pressure Drop

Viscosity = 2 – 8 cP



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Please be aware of the following:

- **WARNING:** Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

Have a question? Contact us at:

www.dupont.com/water/contact-us

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