Product Data Sheet

AMBERSEP™ G26 H Ion Exchange Resin
Uniform Particle Size Strong Acid Cation Exchange Resin for Industrial Chemical Processing Applications

Description

AMBERSEP™ G26 H Ion Exchange Resin is a high performance, uniform particle size, gel resin. It is an excellent choice to meet the stringent demands of the chemical processing industry due to its high strength, toughness, and oxidative stability. AMBERSEP™ G26 H has excellent crush strength to withstand the osmotic shock conditions encountered during solvent exchanges. AMBERSEP™ G26 H also has low levels of extractables and color throw, which is important for organic solvent applications where these components can be extracted into the product, and it has very low metals content, which makes this product ideal for purification applications.

Applications

- Chromium(III) removal
- Ammonia (as a salt or cationic amine) removal
## Typical Properties

**Physical Properties**
- Copolymer: Styrene-divinylbenzene
- Matrix: Gel
- Type: Strong acid cation
- Functional Group: Sulfonic acid
- Physical Form: Tan to brown, translucent, spherical beads

**Chemical Properties**
- Ionic Form as Shipped: H⁺
- Total Exchange Capacity: ≥ 2.0 eq/L
- Water Retention Capacity: 46 – 51%
- Ionic Conversion: H⁺ ≥ 95%

### Particle Size
- Particle Diameter: 650 ± 50 µm
- Uniformity Coefficient: ≤ 1.1

### Purity
- Trace Metals, dry basis:
  - Na: ≤ 100 mg/kg
  - Fe: ≤ 50 mg/kg
  - Cu: ≤ 50 mg/kg
  - Al: ≤ 50 mg/kg
  - Heavy Metals (as Pb): ≤ 20 mg/kg

### Stability
- Whole Uncracked Beads: ≥ 95%
- Friability:
  - Average: ≥ 500 g/bead
  - > 200 g/bead: ≥ 95%
- Swelling: Na⁺ → H⁺: 7%

### Density
- Particle Density: 1.22 g/mL
- Shipping Weight: 800 g/L

### Suggested Operating Conditions
- Maximum Operating Temperature: 130°C (266°F)
- pH Range: 0 – 14
- Bed Depth, min.: 450 mm (1.5 ft)

### Flowrates
- Service: 5 – 150 m/h (2 – 60 gpm/ft²)
- Backwash: See Figure 1
- Regeneration
  - Chemical Injection: 1 – 10 m/h (0.4 – 4 gpm/ft²)
  - Displacement Rinse: 1 – 10 m/h (0.4 – 4 gpm/ft²)
  - Fast Rinse: 5 – 150 m/h (2 – 60 gpm/ft²)
- Total Rinse Requirement: 3 – 6 BV*

### Regenerant
- Concentration: H₂SO₄ 1 – 10%, HCl 4 – 8%

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

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For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775).
**Hydraulic Characteristics**

Bed expansion of AMBERSEP™ G26 H Ion Exchange Resin as a function of backwash water flowrate at 25°C (77°F) and ionic form is shown in Figure 1. The flowrate necessary to achieve a desired bed expansion for other water temperatures can be calculated with the provided equations.

Pressure drop data for AMBERSEP™ G26 H as a function of service flowrate at 20°C (68°F) in water is shown in Figure 2. The pressure drop for other water temperatures can be calculated with the provided equations. Pressure drop data are valid at the start of the service run with clean water.

**Figure 1: Backwash Expansion**

Temperature = 25°C (77°F)

- Graph showing bed expansion as a function of m/h flowrate and temperature.

**Figure 2: Pressure Drop**

Temperature = 20°C (68°F)

- Graph showing pressure drop as a function of m/h flowrate and temperature.

For other temperatures use:

For bed expansion:

\[
F_T = F_{25°C} \times \left[1 + 0.008 \left(1.8 \left(T_C - 45\right)\right)\right], \quad \text{where} \quad F \equiv \text{m/h}
\]

\[
F_T = F_{77°F} \times \left[1 + 0.008 \left(T_F - 77\right)\right], \quad \text{where} \quad F \equiv \text{gpm/ft}^2
\]

For pressure drop:

\[
P_T = P_{20°C} / \left(0.026 \times T_F + 0.48\right), \quad \text{where} \quad P \equiv \text{bar/m}
\]

\[
P_T = P_{68°F} / \left(0.014 \times T_F + 0.05\right), \quad \text{where} \quad P \equiv \text{psi/ft}
\]

**Drying**

AMBERSEP™ G26 H Ion Exchange Resin is sold water wet. In order for good contact with organic solvents for demineralization, metals removal, and catalysis, AMBERSEP™ G26 H needs to be dried. It can be dried in a conventional or convection oven at 100°C or in a vacuum oven. Drying can be monitored by weight change or moisture analysis of the AMBERSEP™ G26 H cation exchange resin.

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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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