



AMBERSEP™ 940U Chelating Resin

Industrial-grade Chelant for Uranium Extraction

Description

AMBERSEP™ 940U Chelating Resin is a uniform particle size, chelating resin with a porous structure designed around a cross-linked polystyrene matrix. Due to its matrix, AMBERSEP 940U resin has excellent kinetics and exceptional physical stability, illustrated by its very high bead integrity and its resistance to osmotic shock and mechanical stress.

AMBERSEP 940U is intended for industrial use and has been specially developed for the extraction of uranium from acidic pregnant solution containing high chloride concentration and low iron concentration.

Applications

- Uranium extraction
- Mineral processing

Typical Physical and Chemical Properties**

Matrix	Styrene-divinylbenzene, macroporous
Type	Chelant
Physical Form	Hard, opaque, beige, spherical beads
Ionic Form as Shipped	Na ⁺
Total Exchange Capacity	≥ 1.7 eq/L
Water Retention Capacity	64 – 69%
Particle Size	
Particle Diameter §	550 ± 50 µm
Uniformity Coefficient	≤ 1.2
Whole Uncracked Beads	≥ 95%
Swelling	H ⁺ → Na ⁺ : 45%
Bulk Density, as Shipped	750 g/L

§ 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™ 940U Chelating Resin as a function of backwash flowrate and fluid specific gravity is shown in Figure 1.

Pressure drop data for AMBERSEP 940U as a function of service flowrate at 40°C (104°F) is shown in Figure 2.

Figure 1: Backwash Expansion

Specific gravity = 1.00, 1.10, 1.17

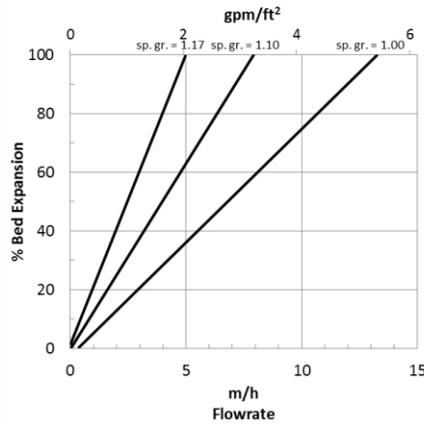
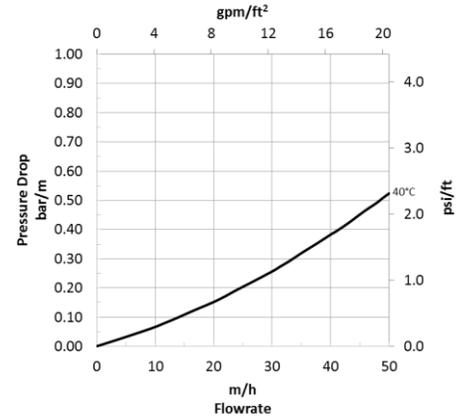


Figure 2: Pressure Drop

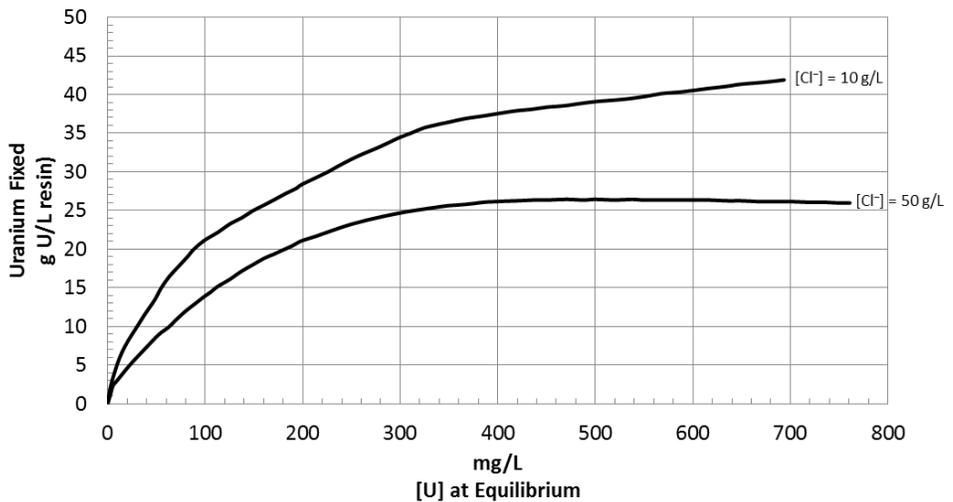
Temperature = 40°C (104°F)



Application Information

The equilibrium isotherm for uranium with AMBERSEP™ 940U Chelating Resin is shown in Figure 3. The data was collected at approximately pH 2 with chloride concentration of 10 g/L and 50 g/L.

Figure 3: Equilibrium Isotherm



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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.

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