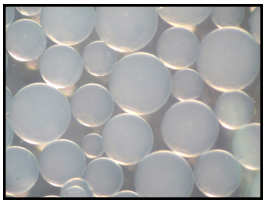
Product Data Sheet

AMBERLITE™ IRN67 Ion Exchange Resin

Nuclear-grade, Gel, Acrylic, Weak Base Anion Exchange Resin for Water Treatment Applications in the Nuclear Power Industry

Description



AMBERLITE™ IRN67 Ion Exchange Resin is designed specifically for use in nuclear loops where highest resin purity and stability are required, and where the "as supplied" resin must have a minimum of ionic and non-ionic contamination. These high standards of resin purity enable plants to achieve reliable and safe production whilst reducing the need for equipment maintenance and minimizing the impact of unscheduled outages.

AMBERLITE™ IRN67 is designed for use in VVER fuel pool purification systems when organic matter is a concern. Its exceptional resistance to organic fouling allows reliable and safe operation for several months in conditions where standard resins fail.

Applications

Fuel pool purification in single bed VVER systems with high organic load

Purity

AMBERLITE™ IRN Ion Exchange Resins are manufactured as nuclear-grade using specific procedures throughout the manufacturing process to keep the inorganic impurities at the lowest possible level. Special treatment procedures are also utilized to remove traces of soluble organic compounds to meet the rigorous demands of the nuclear industry. These high standards of resin purity will help keep nuclear systems free of contaminants and deposits, and prevent increases in radioactivity levels due to activation of impurities in the reactor core. IRN resins are recommended in both non-regenerable and regenerable single bed or mixed bed applications where reliable production of the highest quality water is required and where the "as supplied" resin must have an absolute minimum of ionic and non-ionic contamination.

Form No. 177-03754, Rev. 2
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Typical Properties

Physical Properties	
Copolymer	Crosslinked acrylic
Matrix	Gel
Type	Weak base anion
Functional Group	Tertiary amine
Physical Form	White, translucent, spherical beads
Chemical Properties	
Ionic Form as Shipped	Free base (FB)
Total Exchange Capacity	≥ 1.60 eq/L (FB form)
Water Retention Capacity	56.0 – 62.0% (FB form)
Purity	
Cl^-	≤ 5 mg/mL
Particle Size [§]	
Particle Diameter	500 – 750 µm
Uniformity Coefficient	≤ 1.80
< 300 µm	≤ 1.0%
> 1180 µm	≤ 5.0%
Stability	
Whole Uncracked Beads	≥ 95%
Whole Beads	≥ 98%
Density	
Shipping Weight	650 g/L

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

Suggested Operating Conditions

Temperature Range (FB form)	5 – 60°C (41 – 140°F)
pH Range (Stable)	0 – 14

For additional information regarding recommended minimum bed depth, operating conditions, and regeneration conditions for separate beds (Form No. 177-03729) in water treatment, please refer to our Tech Fact.

Hydraulic Characteristics

Estimated bed expansion of AMBERLITE™ IRN67 Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AMBERLITE™ IRN67 as a function of service flowrate and temperature is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean water and a well-classified bed.

Figure 1: Backwash Expansion

Temperature = 10 – 60°C (50 – 140°F)

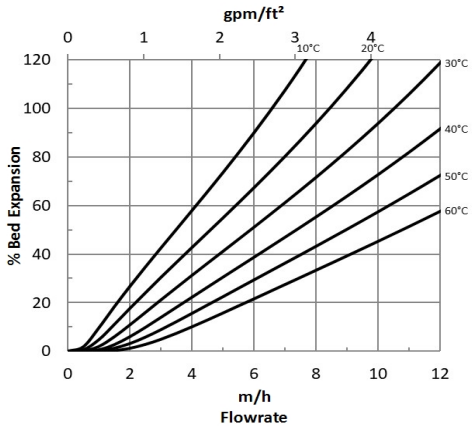
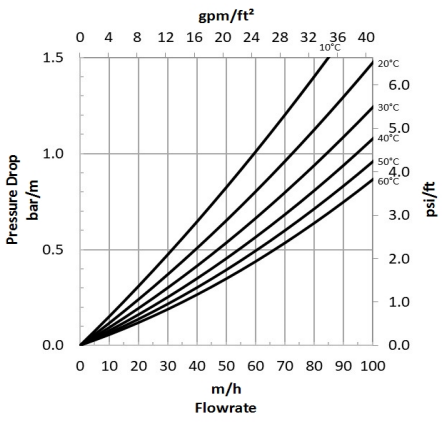


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



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Product Stewardship

DuPont has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with DuPont products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

DuPont strongly encourages its customers to review both their manufacturing processes and their applications of DuPont products from the standpoint of human health and environmental quality to ensure that DuPont products are not used in ways for which they are not intended or tested. DuPont personnel are available to answer your questions and to provide reasonable technical support. DuPont product literature, including safety data sheets, should be consulted prior to use of DuPont products. Current safety data sheets are available from DuPont.

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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