



Product Data Sheet

DuPont™ AmberLite™ IR69F Ion Exchange Resin

Pharmaceutical Grade Cation Exchange Resin Intermediate

Description

DuPont™ AmberLite™ IR69F resin is an insoluble, strongly acidic, cation exchange resin supplied in a fully hydrated bead form. AmberLite™ IR69F resin is suitable for use in pharmaceutical applications in the bead form as a starting material as a carrier for basic (cationic) drugs. This product is derived from a sulfonated copolymer of styrene and divinylbenzene.

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Amber, translucent, spherical beads
Chemical Properties	
Ionic Form as Shipped	Na ⁺
Total Exchange Capacity	> 4.4 (eq/kg)
Water Retention Capacity	44.0 – 51.0%
Styrene (ppm)	1 ppm maximum
Total Impurities (ppm)	3 ppm maximum
Heavy metals content	≤ 10 ppm
Iron	≤ 50 ppm
Particle Size [§]	
< 300 μm	≤ 2%
> 1180 μm	≤ 5%

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

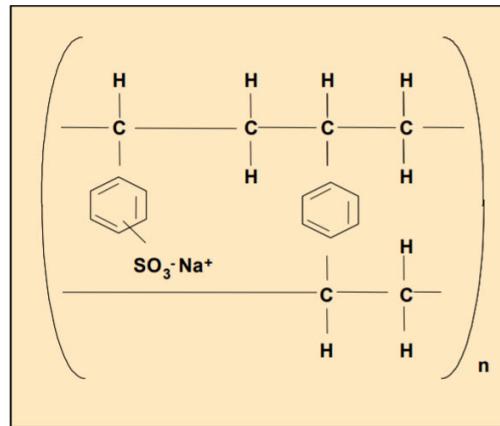
Chemical Properties

DuPont™ AmberLite™ IR69F resin is derived from a sulfonated copolymer of styrene and divinylbenzene. The mobile, or exchangeable, cation is sodium; this can be exchanged for, or replaced by, virtually any cationic species.

Since AmberLite™ IR69F resin is an insoluble salt of strong acid and a strong base, its ability to exchange ions is virtually independent of pH.

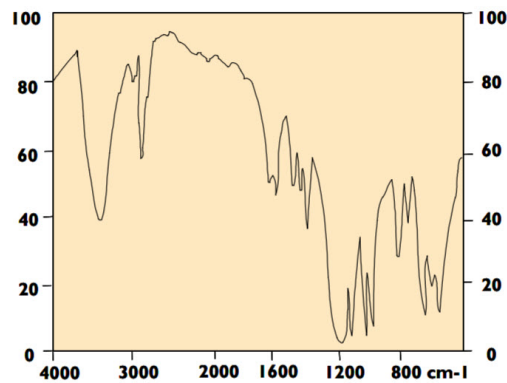
The chemical structure for AmberLite™ IR69F is shown in Figure 1.

Figure 1: AmberLite™ IR69F Chemical Structure



AmberLite™ IR69F can be identified by infrared spectroscopy, as shown in Figure 2.

Figure 2: AmberLite™ IR69F Spectrum



When used as a drug carrier, AmberLite™ IR69F resin provides a means for binding medicinal agents onto an insoluble polymeric matrix. This can afford an effective means for minimizing problems of taste and odor, which may be associated with the drug. Controlled or sustained release properties can also be imparted to oral dosage formulations through the formation of resin-drug complexes (drug resinates). The drug is released from the resin *in vivo* as the drug reaches equilibrium with the high electrolyte concentrations which are typical of the gastrointestinal tract.

Applications

- Taste Masking
- Drug Stabilization
- Sustained Release

When used as a drug carrier, AmberLite™ IR69F resin provides a means for binding medicinal agents onto an insoluble polymeric matrix. This can afford an effective means for minimizing problems of taste and odor that may be associated with the drug. Controlled or sustained release properties can also be imparted to oral dosage formulations through the formation of resin-drug complexes (drug resinates). The drug is released from the resin in vivo as the drug reaches equilibrium with the high electrolyte concentrations, which are typical of the gastrointestinal tract

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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