DUPONT

Ion Exchange

Pressurized Water Reactor

Chemical & Volume Control System (Primary Loop Chemistry)

Resins used for nuclear power primary side chemical control must purify water in a lithium or potassium and borate environment. Our IRN-grade ion exchange resins have proven to be the premier resins chosen to protect nuclear power plants throughout the world.

PRODUCT	APPLICATION	FEATURES AND RECOMMENDED USES	TYPE	MATRIX	MINIMUM TOTAL VOLUME CAPACITY (eq/L)
DuPont™ AmberLite™ IRN77 H	Delithiation	All-purpose cation resin for multiple nuclear applications. 8% DVB, uniform particle size cation resin with high capacity. Used for control of 7Li or K content of in the reactor coolant and removal of cationic impurities.	SAC	GEL	1.90
DuPont™ AmberLite™ IRN97 H	Delithiation/ CANDU Moderator	High capacity 10% DVB uniform particle size cation resin for primary side purification and control of 7Li or K content of the reactor coolant.	SAC	GEL	2.10
DuPont™ AmberLite™ IRN99 H	Delithiation/ CANDU Moderator	Premium 16% DVB uniform particle size cation resin with very high capacity and oxidative stability. Highest Cs selectivity and capacity for long runs and reduced waste and exposure. The high oxidative stability results in reduced reactor water sulfate concentration in PWR primary applications.	SAC	GEL	2.50
DuPont™ AmberLite™ IRN360 H/OH	Delithiation & CVCS	Gel type mixed bed composed of uniform particle size resins: 2/3 high capacity AmberLite™ IRN97 H and 1/3 AmberLite™ IRN78 OH on a volume basis. High cation content allows use for Lithium control like a cation resin, then as a CVCS mixed bed when exhausted in Lithium.	MB	GEL/GEL	2.10/1.20
DuPont™ AmberLite™ IRN9652 H	CVCS	20% DVB macroporous cation resin with large pore structure for colloid removal. Used as cation overlay. Very high selectivity for ^{137}Cs.	SAC	MACRO	1.95
DuPont™ AmberLite™ IRN78 OH	Deboration	Premium high solids uniform particle size anion resin with very high capacity. Used for removal of anionic radioisotopes and deboration with a high capacity for boron. Specifically processed to minimize organic chloride content.	SBA	GEL	1.20
DuPont™ AmberLite™ IRN9766 OH	CVCS	Macroporous anion resin designed to remove radioactive colloidal material in all nuclear applications. Often used as an overlay above a mixed bed or a cation resin.	SBA	MACRO	0.85
DuPont™ AmberLite™ IRN9580 OH	CVCS /VVER	Highly porous macroporous acrylic anion resin designed to remove radioactive colloidal material and organic matter in nuclear applications, even in high boric acid concentrations. Used as an overlay above a mixed bed or a cation resin, or as a single bed.	SBA	MACRO	0.70
DuPont™ AmberLite™ IRN150 H/OH	CVCS	Nuclear grade mixed bed composed of uniform particle size AmberLite™ IRN77 H and IRN78 OH resins on a 1:1 equivalent basis.	MB	GEL/GEL	1.90/1.20
DuPont™ AmberLite™ IRN160 H/OH	CVCS / CANDU Moderator / Pre-outage clean-up	High capacity nuclear grade mixed bed composed of uniform particle size AmberLite™ IRN97 H and IRN78 OH resins on a 1:1 equivalent basis. Designed to minimize separation of anion and cation during installation and transfer.	MB	GEL/GEL	2.10/1.20
DuPont™ AmberLite™ IRN170 H/OH	CVCS / CANDU Moderator / Pre-outage clean-up	Premium nuclear grade mixed bed composed of uniform particle size AmberLite™ IRN99 H and IRN78 OH Resins on a 1:1 equivalent basis. Offers maximum oxidative stability and highest operating capacity to achieve the lowest reactor water sulfate concentration and longest resin life.	MB	GEL/GEL	2.50/1.20

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PRODUCT	APPLICATION	FEATURES AND RECOMMENDED USES	TYPE	MATRIX	MINIMUM TOTAL VOLUME CAPACITY (eq/L)
DuPont™ AmberLite™ IRN9882 H/OH	Pre-outage clean-up	Nuclear grade macroporous mixed bed composed of 40% cation resin (12%DVB) and 60% AmberLite™ IRN9766 OH resin on a volume basis. Offers high exchange kinetics and the ability to remove colloids to achieve the fastest decontamination pre outage.	MB	MACRO/ MACRO	1.65/0.85
DuPont™ AmberLite™ IRN217 Li/OH	CVCS	Nuclear grade mixed bed composed of uniform particle size AmberLite™ IRN77 H Resin loaded with 7Li at ≥ 99.9% of isotopic purity and AmberLite™ IRN78 OH on a 1:1 equivalent basis for primary side purification with robust pH control.	MB	GEL/GEL	1.90/1.20
DuPont™ AmberLite™ IRN317 Li/OH	CVCS	Premium nuclear grade mixed bed composed of uniform particle size AmberLite™ IRN99 H Resin loaded with 7Li at ≥ 99.9% of isotopic purity and AmberLite™ IRN78 OH on a 1:1 equivalent basis offering the highest operating capacity for long resin life, less waste and reduced exposure.	MB	GEL/GEL	2.50/1.20

Key:

SBA = Strong Base Anion
SAC = Strong Acid Cation
MB = Mixed Bed

Powering performance worldwide.

With a large global manufacturing footprint, strong R&D expertise and technical support services and systems, we supply high market volumes with high quality. DuPont partners with you, our customer, to understand unmet needs and develop tailored solutions.

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Have a question? Contact us at:

www.dupont.com/water/contact-us

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