

Pressurized Water Reactor Chemistry & Volume Control System (Primary Loop Chemistry) Product Recommendation

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 Uses | Type | Matrix | Total Volume Capacity (el/L)* | Ionic Form as Shipped |
|--------------------|--|--|------|-------------|-------------------------------|-----------------------|
| AMBERLITE™ IRN77 | 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 | 2.0 | H+ |
| AMBERLITE™ IRN97 H | Delithiation | 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 | 2.2 | H+ |
| AMBERLITE™ IRN99 | Delithiation | 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 | 2.6 | H+ |
| AMBERLITE™ IRN360 | Delithiation & CVCS | Gel type mixed bed composed of 2/3 high capacity UPS cation resin AMBERLITE™ IRN97H and 1/3 AMBERLITE™ IRN78 on a volume basis. High cation content allows its use for Lithium control like a cation resin, then as a CVCS mixed bed when exhausted in Lithium. | MB | GEL/GEL | 2.2/1.25 | H+/OH- |
| AMBERLITE™ IRN9652 | CVCS | 20% DVB macroporous cation resin with large pore structure for colliod removal. Used as cation overlay. Very high selectivity for 137Cs. | SAC | Macro | 2.0 | H+ |
| AMBERLITE™ IRN9675 | CVCS | Nuclear grade macroporous cation resin designed to remove radioactive colloidal material in all nuclear applications. Often used as an overlay above a mixed bed. | SAC | Macro | 1.7 | H+ |
| AMBERLITE™ IRN78 | 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 | 1.25 | OH- |
| AMBERLITE™ IRN9766 | 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 | 0.9 | OH- |
| AMBERLITE™ IRN150 | CVCS | Nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN77 and IRN78 on a 1:1 equivalent basis. | MB | GEL/GEL | 2.0/1.25 | H+ /OH- |
| AMBERLITE™ IRN160 | CVCS/CANDU Moderator/Pre-outage clean-up | High capacity nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN97H and IRN78 on a 1:1 equivalent basis. Designed to minimize separation of anion and cation during installation and transfer. | MB | GEL/GEL | 2.2/1.25 | H+ /OH- |
| AMBERLITE™ IRN170 | CVCS/CANDU Moderator/Pre-outage clean-up | Premium nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN99 and IRN78 on a 1:1 equivalent basis. Offers maximum oxidative stability and highest operating capacity to acheive the lowest reactor water sulfate concentration and longest resin life. | MB | GEL/GEL | 2.6/1.25 | H+ /OH- |
| AMBERLITE™ IRN9882 | Pre-outage clean-up | Nuclear grade macroporous mixed bed composed of 40% cation resin (12%DVB) and 60% AMBERLITE™ IRN9766 on a volume basis. Offers high exchange kinetics and the ability to remove colloids to achieve the fastest decontamination pre outage. | MB | Macro/Macro | 1.7/0.9 | H+ /OH- |
| AMBERLITE™ IRN164 | CANDU Moderator | Nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN97H loaded with natural Li and AMBERLITE™ IRN78 on a 1:1 equivalent basis for CANDU heat transport system purification. | MB | GEL/GEL | 2.2/1.25 | NatLi+ / OH- |
| AMBERLITE™ IRN217 | CVCS | Nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN77 loaded with 7Li at ≥ 99.9% of isotopic purity and AMBERLITE™ IRN78 on a 1:1 equivalent basis for primary side purification with robust pH control. | MB | GEL/GEL | 2.0/1.25 | 7tLi+ /OH- |
| AMBERLITE™ IRN317 | CVCS | Premium nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN99 loaded with 7Li at ≥ 99.9% of isotopic purity and AMBERLITE™ IRN78 on a 1:1 equivalent basis offering the highest operating capacity for long resin life, less waste and reduced exposure. | MB | GEL/GEL | 2.6/1.25 | 7tLi+ /OH- |

Key:
 * = Dry weight basis
 SBA = Strong Base Anion
 SAC = Strong Acid Cation
 MB = Mixed Bed

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