Ion Exchange

Reverse Osmosis

Fuel Pool Clean Up

Spent fuel is handled and stored under water for safety. Fuel pool clean-up systems are employed to ensure quality and clarity of this water. DuPont provides special ion exchange resins in either single beds or mixed beds made from individual components or ready to use mixed beds that can be used for spent fuel pool clean-up systems. In certain cases, reverse osmosis membranes can be used to concentrate the radioactive stream and thus reduce the waste amount to be treated.

TECHNOLOGY	PRODUCT	FEATURES AND RECOMMENDED USES	TYPE	MATRIX	MINIMUM TOTAL VOLUME CAPACITY (eq/L)
ION EXCHANGE RESINS	**INDIVIDUAL RESINS FOR CUSTOMIZED CHEMISTRY CONTROL1**				
	DuPont™ AmberLite™ IRN97 H	High capacity 10% DVB uniform particle size cation resin for purification of fuel pool in VVER circuit #4 systems with good resistance to oxidative conditions.	SAC	GEL	2.10
	DuPont™ AmberLite™ IRN99 H	Premium 16% DVB uniform particle size cation resin with very high capacity and oxidative stability. High selectivity for cationic radioisotopes and high total capacity for long runs resulting in reduced waste and exposure. The high oxidative stability results in reduced fuel pool sulfate concentration and long resin life in this oxidative environment.	SAC	GEL	2.50
	DuPont™ AmberLite™ IRN78 OH	Premium high solids uniform particle size anion resin with very high capacity used for removal of anionic radioisotopes.	SBA	GEL	1.20
	DuPont™ AmberLite™ IRN9766 OH	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
	READY TO USE MIXED BEDS				
	DuPont™ AmberLite™ IRN160 H/OH	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	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 high operating capacity to achieve low fuel pool sulfate concentration and long resin life.	MB	GEL/GEL	2.50/1.20
	DuPont™ AmberLite™ IRN9882 H/OH	Nuclear grade macroporous mixed bed composed of 40% cation resin (12% DVB) and 60% AmberLite™ IRN9766 OH Resins on a volume basis. Offers high exchange kinetics and the ability to remove colloids for highest decontamination rates.	MB	MACRO/ MACRO	1.65/0.85
REVERSE OSMOSIS	FilmTec™ Elements	Please contact your DuPont representative for assistance.	N/A	N/A	N/A

Key:

[1] = Mixed beds using individual cation and anion must be prepared in-situ.
SBA = Strong Base Anion
SAC = Strong Acid Cation
MB = Mixed Bed

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