



WATER TREATMENT AT POWER PLANT

# Pressurized Water Reactor Condensate Polisher Product Recommendations

Condensate polishers protect critical steam generator components from potential condenser leaks, thereby improving plant reliability. Our ion exchange resins have been the backbone of condensate polishing systems throughout the world for decades. Depending on the chemistry used in the steam generator feed water, the right resin combination will help provide the optimum performance in terms of treated condensate purity and cycle run length.

PRODUCT	AMINE	CATION PRE-BED	FEATURES AND RECOMMENDED USES	TYPE	MATRIX	TOTAL VOLUME CAPACITY (eq/L min)	IONIC FORM AS SHIPPED
AMBERLITE™ HPR550 OH	NH <sub>4</sub> / Organic Amine	N/A	By far the most common resin combination used worldwide for pressurized water reactor condensate polishing applications. This pairing offers the best balance of properties: high capacity gel type resins, uniform particle size, and high physical stability. AMBERLITE™ HPR650 H Resin is also an excellent choice for cation pre-bed required to handle NH <sub>4</sub> /amine load.	SBA	GEL	1.10	OH <sup>-</sup>
AMBERLITE™ HPR650 H		Yes		SAC	GEL	2.00	H <sup>+</sup>
AMBERLITE™ HPR550 OH	NH <sub>4</sub> / Organic Amine	N/A	Pairing that offers you one of the highest NH <sub>4</sub> /amine capacity with good anion protection, allowing enhanced pH for better FAC control. AMBERLITE™ HPR1600 H Resin provides high NH <sub>4</sub> /amine capacity for cation pre-bed.	SBA	GEL	1.10	OH <sup>-</sup>
AMBERLITE™ HPR1600 H		Yes		SAC	GEL	2.40	H <sup>+</sup>
AMBERLITE™ HPR9000 OH	NH <sub>4</sub> / Organic Amine	N/A	Pairing that offers you high NH <sub>4</sub> /amine capacity with good anion protection. AMBERLITE™ HPR1600 H Resin provides high NH <sub>4</sub> /amine capacity for cation pre-bed. The use of a macroporous anion resin provides excellent resistance to surface fouling and kinetic impairment.	SBA	MACRO	0.80	OH <sup>-</sup>
AMBERLITE™ HPR1600 H		Yes		SAC	GEL	2.40	H <sup>+</sup>
AMBERLITE™ HPR9000 OH	ETA	N/A	The only ion exchange resin pair shown to mitigate ETA chemistry related anion resin kinetic impairment. Designed specifically for use with ETA chemistry.	SBA	MACRO	0.80	OH <sup>-</sup>
AMBERLITE™ HPR1400 H		No		SAC	GEL	2.00	H <sup>+</sup>
AMBERLITE™ HPR9000 OH	Organic Amines	N/A	Pairing that offers you high Na selectivity for operation past amine break. The use of a macroporous anion resin provides excellent resistance to surface fouling and kinetic impairment.	SBA	MACRO	0.80	OH <sup>-</sup>
AMBERLITE™ HPR2000 H		No		SAC	MACRO	1.70	H <sup>+</sup>
AMBERLITE™ IRN360 H/OH	Non Regenerable Start-up	N/A	Ready to use gel type mixed bed composed of 2/3 of high capacity UPS cation resin AMBERLITE™ IRN97 H and 1/3 IRN78 OH Resins on a volume basis. High cation dosage volume allows high maximum exchange capacity when cation species are dominant (alkaline pH), in all PWR applications.	MB	GEL/GEL	2.10/1.20	H <sup>+</sup> /OH <sup>-</sup>
AMBERLITE™ 600i	Layer Separation	N/A	Inert interface separator compatible with all PWR condensate polishing resin pairs.	Inert	GEL	N/A	N/A

**Key:**

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

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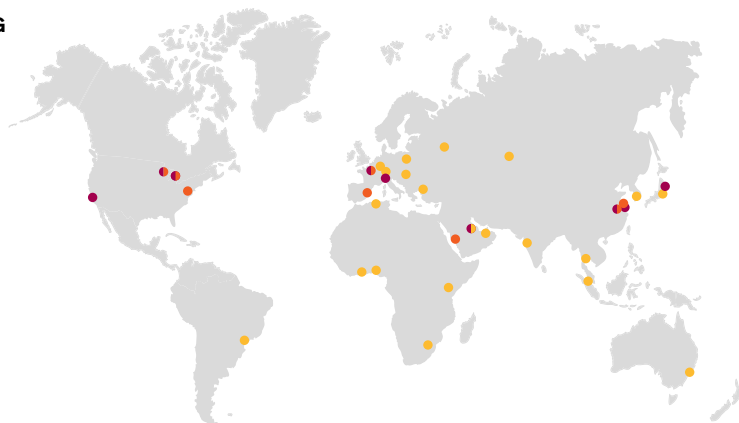
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WARNING: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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