



WATER TREATMENT AT POWER PLANT

Stator Cooling Circuit Product Recommendations

The stator cooling circuit requires careful control of its chemistry (pH, dissolved oxygen, dissolved copper) in order to provide efficient cooling, little corrosion, and no deposition of corrosion products in the cooling elements. Ion exchange resins are used to control the chemistry of the loop by increasing or decreasing pH, lowering conductivity, and removing dissolved copper.

PRODUCT	FEATURES AND RECOMMENDED USES	TYPE	MATRIX	MINIMUM TOTAL VOLUME CAPACITY (eq/L)	IONIC FORM AS SHIPPED
INDIVIDUAL RESINS FOR CUSTOMIZED CHEMISTRY CONTROL¹					
AMBERLITE™ HPR550 OH	High capacity uniform particle size gel type anion resin. Paired best with AMBERLITE™ HPR650 H or AMBERLITE™ HPR1300 Na depending on the preferred operational method.	SBA	GEL	1.10	OH ⁻
AMBERLITE™ HPR1300 Na	High capacity uniform particle size gel type cation resin. Sodium form cation is best used for enhanced pH control. Paired best with AMBERLITE™ HPR550 OH to be used to increase the pH of the purification loop while still removing copper and other cation impurities.	SAC	GEL	2.20	Na ⁺
AMBERLITE™ HPR650 H	A high capacity uniform gel cation resin for removal of copper and other cation impurities and pH control. Paired best with AMBERLITE™ HPR550 OH to be used when neutral pH is targeted.	SAC	GEL	2.00	H ⁺
READY TO USE MIXED BEDS					
AMBERLITE™ IRN150 H/OH	Nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN77 H and IRN78 OH on a 1:1 equivalent basis for full demineralization.	MB	GEL/ GEL	1.90/1.20	H ⁺ /OH ⁻
AMBERLITE™ IRN160 H/OH	High capacity nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN97 H and IRN78 OH on a 1:1 equivalent basis. Designed to minimize separation of anion and cation during installation and transfer in stator cooling applications.	MB	GEL/ GEL	2.10/1.20	H ⁺ /OH ⁻
AMBERLITE™ IRN170 H/OH	Premium nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN99 H and IRN78 OH on a 1:1 equivalent basis. Offers maximum oxidative stability and highest operating capacity to achieve the lowest ionic leakage and longest resin life.	MB	GEL/ GEL	2.50/1.20	H ⁺ /OH ⁻

Key:

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

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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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