



WATER TREATMENT AT POWER PLANT

# Steam Generator Blowdown Product Recommendations

A steam generator blowdown (SGBD) system purifies the water in steam generators to minimize corrosion and reduce ionic hideout. A low percentage of the total flow is directly removed from the steam generators and treated by ion exchange. The run length of the resin bed is determined by sodium leakage or other impurities; therefore, ion exchange resins must have high capacity and high selectivity for the impurities to be removed.

PRODUCT	FEATURES AND RECOMMENDED USES	TYPE	MATRIX	MINIMUM TOTAL VOLUME CAPACITY (eq/L)	IONIC FORM AS SHIPPED
AMBERLITE™ IRN99 H	Premium 16% DVB uniform particle size cation resin with very high Na selectivity, total capacity, and oxidative stability. Provides long resin life when operating in the amine form. Ready to use resin for non-regenerable units. Highly controlled for low sodium traces.	SAC	GEL	2.50	H <sup>+</sup>
AMBERLITE™ IRN97 H	High capacity 10% DVB uniform particle size cation resin for plants operating in the H/OH cycle or in the ammonia cycle. Ready to use resin for non-regenerable units. Highly controlled for low sodium traces.	SAC	GEL	2.10	H <sup>+</sup>
AMBERLITE™ IRN77 H	Uniform particle size gel cation resin processed to the highest purity standards required for treating water in the nuclear power industry.	SAC	GEL	1.90	H <sup>+</sup>
AMBERLITE™ IRN9652 H	High capacity 20% DVB macroporous cation resin. Highest selectivity for Na in organic amine form operation providing the longest resin life, mainly in morpholine conditioning. Ready to use resin for non-regenerable units.	SAC	MACRO	1.95	H <sup>+</sup>
AMBERLITE™ IRN78 OH	Premium high solids uniform particle size anion resin with very high capacity. Specifically processed to minimize organic chloride content. Ready to use resin for non-regenerable units.	SBA	GEL	1.20	OH <sup>-</sup>
AMBERLITE™ HPR2000 H	20% DVB uniform particle size macroporous cation resin with very high Na selectivity and oxidative stability. Providing long resin life when operating in the amine form. Best used in regenerable mixed beds.	SAC	MACRO	1.70	H <sup>+</sup>
AMBERLITE™ HPR1600 H	Premium 16% DVB uniform particle size cation resin with very high Na selectivity, total capacity, and oxidative stability. The larger particle size of AMBERLITE™ HPR1600 H makes it the right choice when pressure drop is a concern. Best used in regenerable mixed beds.	SAC	GEL	2.40	H <sup>+</sup>
AMBERLITE™ HPR9000 OH	Macroporous anion resin providing excellent resistance to surface fouling. Best used in regenerable mixed beds.	SBA	MACRO	0.80	OH <sup>-</sup>
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 <sup>+</sup> /OH <sup>-</sup>
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.	MB	GEL/GEL	2.10/1.20	H <sup>+</sup> /OH <sup>-</sup>
AMBERLITE™ HPR650 H	Ready to use, high capacity uniform gel type resins combination for normal operation in circuit #5 of VVER. This combination of high exchange capacity strong acid cation and strong base anion is the ideal combination for achieving high operating capacity. Best used in regenerable mixed beds.	SAC	GEL	2.00	H <sup>+</sup>
AMBERLITE™ HPR550 OH		SBA	GEL	1.10	OH <sup>-</sup>

**Key:**

SBA = Strong Base Anion  
SAC = Strong Acid Cation

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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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