Recommended Resins for Specific Contaminants

CHEMICAL CONTAMINANT TO BE REMOVED	APPLICATION NATURE OF SOLUTION	RECOMMENDED RESIN	IONIC FORM	EFFECTIVE pH RANGE	COMMENTS
Aluminum	10-15% phosphoric acid	CG8-H/CG10-H	H	pH > 0	Regen w/ 20% H_2SO_4 (also removes Fe)
	10-15% phosphoric acid	SACMP-H	H	pH > 0	Used for improved resistance to breakage
	All waters	CG8	Na/H	pH >0	Works best at low pH
Ammonia & amines	Alcohol solutions	CG8-H/CG10-H	H	pH >7	Acid regeneration
	Alcohol solutions	WACMP	H	pH > 7	Acid regeneration(only works when pH is >7)
	Soft water	CG8-H	H	pH > 7	Resin swells in alcohol
Ammonia	Soft water	CG8	Na	pH > 5	Salt regeneration(limited capacity/poor removal)
	Hard water	SIR-600	Na	pH > 5	Salt regeneration
Antimony (Antimonite)	Concentrated hydrochloric acid	SBG1/SBG2	Cl	pH < 1	Forms chloride complexes/regen with water
Arsenic (Arsenate)	Soft or Hard water	SBG1/SBG2	Cl	pH < 10	Must be oxidized to arsenate
	Soft or Hard water	SBG1/SBG2	Cl	pH < 10	Present as anion, salt regeneration
	All waters	SIR-900	—	pH 6 to 8	
Barium	Soft or Hard water	CG8/CG10	Na	pH > 2	Salt regeneration
Boron (Borate)	Irrigation Supplies	SBG1	Cl	pH < 10	
	Semiconductor Plants	SIR-150	FB	pH>3	Remove boron to nondetect levels
Cadmium	Soft or DI water	CG8	Na	pH > 2	
	Hard water	WACMP	Na	pH > 6.5	
	Hard water	SIR-300	Na	pH < 6.5	
	Cadmium cyanide plating effluents	SBG1/SBG2	Cl	pH < 10	
Calcium	Brine Purification	SIR-500	Na	pH < 11	Also removes other hardness ions
Cesium	All waters	SIR-600	Na	pH > 5	Salt regeneration (keep flow below 2 gpm/sqft)
Chromium Cr^{+3}	Soft or Hard water	CG10/SACMP	Na	pH > 4	Can be salt regenerated (also removes hardness)
	Soft or Hard water	WACMP	Na	pH > 6	Sodium form operation (also removes hardness)
	Hard water	SIR-300	Na	pH >1.5	Best choice for high TDS solutions
Chromium Cr^{+6}	All waters	SBG1/SBG2	Cl	pH < 7.0	Salt regeneration
	All waters	WBMP(SO_4)	FB/SO_4	pH < 6.0	Best choice for regenerable applications
	All waters	SIR-700	SO_4	pH < 6.0	Best choice for single use applications
Cobalt	Soft water	CG8	Na	pH > 2	Cannot remove cobalt past hardness break
	All waters	SIR-300	Na	pH >1.5	Cobalt is non-ionized at high pH
Copper	Copper cyanide plating	SBG1/SBG2	Cl	pH < 10	
	Hard water	SIR-300	Na	pH > 1.5	
	Hard water	WACMP	Na	pH > 6.5	
	Soft water	CG8	Na	pH > 2	
Cyanide	Cyanide waste treated wth ferrous salts	SBACR	Cl	pH > 7	Salt regenerated
	Hydroxide cycle	SBG1/SBG2	OH	pH < 11	
Ferrocyanide	Treated cyanide waste	SBACR	Cl	pH < 10	Salt regenerated
Fluorine (fluoride)	Waste water	SBG1/SBG2	Cl	pH < 10	
	All waters	SIR-900	—	pH 6 to 8	
Gold	Gold cyanide plating	SBG1/SBG2	Cl	pH < 10	Chloride cycle (not regenerated)
	Acid Gold plating efluents	SIR-400	H	pH < 10	
Iron	Weakly acidic solutions	CG8	Na	pH > 2	Intermediate & weak acids up to phosphoric
	Concentrated hydrochloric acid	SBG1	Cl	pH < 1	Regenerated by water rinse
Lead	Hard or Soft water	CG8/WACG	Na	pH > 2	Sodium or calcium form
	Waste water	SIR-300/WACG	Na	pH >1.5	Preferred where mixed metals are present
	All waters	SIR-900	—	pH 6 to 8	
Magnesium	Brine Purification	SIR-500	Na	pH < 11	Also removes other hardness ions
Manganese	Potable water	CG8	Na	pH > 2	Sodium form (Mn is removed with other hardness)
Mercury (anionic)	Tap water, all pH ranges	SIR- 200	Cl	pH < 10	SIR -> 1-10 ppb, -WBMP/CG8 -> 50 - 150 ppb.
Mercury (complexed)	When present as organic complex	SIR-200/SIR-300	Na	pH < 10	
Mercury(cationic)	Tap water, all pH ranges	WACMP/SIR-400	Na	pH > 4	In absence of Chlorides
Molybdenum	Anionic complexes	WBMP/SIR-700	SO_4	pH < 7	
Nickel	Hard water	SIR-300	Na	pH >1.5	Metal selective (does not remove hardness)
	Soft water	SIR-500	Na	pH >1.5	Metal selective (also removes hardness)
	Hard water	WACMP	Na	pH >6.5	Sodium form (also removes hardness)
	Soft water	CG8	Na	pH > 2	Limited to low TDS soft water
Nitrate	High sulfate waters	SIR-100	Cl	pH < 10	
	Low sulfate waters	SBG1/SBG2	Cl	pH < 10	
Organics (natural)	Decolorizing surface waters	SIR-22P	Cl	pH >5	Can be salt regenerated
	Decolorizing surface waters	SBACR	Cl	pH > 5	Can be salt regenerated
Potassium	Wine stabilization	CG8	Na	pH > 5	Can be salt regenerated
Palladium	Anionic complexes	SBG1/SBG2	Cl	pH < 10	
Phenol	Waste water	WBMP	FB	pH < 4	
Phosphate	Soft or hard water	SBG1P/SBACR	Cl	pH < 10	Single bed salt regeneration or DI
Platinum	Anionic complexes	SBG1/SBG2	Cl	pH < 10	
Radium	Soft or hard water	CG8	Na/Ca	pH > 2	Can be salt regenerated
Selenium (selenite)	Soft or hard water	SBG1/SBG2	Cl	pH < 10	Single bed salt regeneration or DI
	Soft or hard water	SBG1/SBG2	Cl	pH < 10	Single bed salt regeneration or DI
Silver	Photographic wastes	SBG1	Cl	pH < 11	Regenerated with sulfuric acid
	Silver cyanide plating	SBG1	Cl	pH >7	Use with WBMP for regenerable applications
Strontium	Soft water	CG8	Na	pH > 2	
Uranium (anion)	Groundwater	SBG1	Cl	pH < 10	Single bed salt regeneration
Uranium (cation)	Groundwater	CG8	Ca	pH > 2	Single bed salt regeneration
Zinc	Zinc cyanide plating effluents	SBG1/ SBG2	Cl	pH >7	
	Softened water	CG8	Na	pH 2 to 9	
	Hard water	WACMP	Na	pH 5 to 9	
	Hard water	SIR-300	Na	pH < 6.5	
	Concentrated acids	SBG1/SBG2	Cl	pH < 1	Removes zinc complexes/eluted with water

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