High Performance Water Treatment for Power Generation

GRAVE

Gravex[®] Ion Exchange Resin Products

ANION EXCHANGE RESINS (GR-1)	MATRIX	GRAVEX SERIES
Strongly Basic Type 1 Gel	Styrenic	GR-1-0, GR-1-9
Strongly Basic Type 1 Gel, Porous	Styrenic	GR-1-1
Strongly Basic Type 1 Gel, Macroporous	Styrenic	GR-1-5
Strongly Basic Type 2 Gel	Styrenic	GR-1-2
Strongly Basic Type 2 Gel, Porous	Styrenic	GR-1-3
Strongly Basic Type 1 Gel and Macroporous	Acrylic	GR-1-6
Medium Base Gel	Acrylic	GR-1-7
Weakly Basic Macroporous	Styrenic	GR-1-8



Anions available in OH and Cl forms. Other ionic forms may also be offered. Available as uniform particle size and various grades as listed on back.

CATION EXCHANGE RESINS (GR-2)	MATRIX	GRAVEX SERIES
Strongly Acidic Gel	Styrenic	GR-2-0
Strongly Acidic Gel, Porous	Styrenic	GR-2-1
Strongly Acidic Macroporous	Styrenic	GR-2-5
Weakly Acidic Macroporous	Acrylic	GR-2-6
Weakly Acidic Macroporous	Acrylic	GR-2-7
Weakly Acidic Macroporous	Styrenic, Imminodiacetic Functionality	GR-2-9
Strongly Acidic Gel High XL Cation	Styrenic	GR-2-16
Strongly Acidic Macroporous, High Capacity	Styrenic	GR-2-17
Strongly Acidic Gel	Styrenic, ⁷ Li Form	GR-7-99
Strongly Acidic Gel High XL Cation	Styrenic, ⁷ Li Form	GR-7-16
Strongly Acidic Macroporous, High Capacity	Styrenic, ⁷ Li Form	GR-7-17

Cations available in H, Na, or Morpholine forms. Available as uniform particle size and various grades as listed on back.

Superior Products, Global Reach and Worldwide Locations

Graver Technologies designs, develops and manufactures ion exchange technology and products that enable and enhance separation, purification, process filtration and analysis A Marmon Water/Berkshire Hathaway Company, Graver has a long history of strong corporate support, ion exchange innovation, industry commitment, global reach and world-class capabilities. Whether you are around the corner or across the globe, Graver Technologies supports customers with superior products and services. Customers worldwide trust our products over competitive offerings; we export about a third of our manufacturing output. Backed by more than half a century of innovation, our ion exchange products treat over 6.5 billion gallons of water daily in more than 38 countries. In the United States, over 90 percent of nuclear power facilities choose Graver's ion exchange systems, services and products to meet stringent water purity requirements.

Headquarters

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MIXED BED RESINS (GR-3, GR-4)	DESCRIPTION	APPLICATIONS
GC-3-1 SC, GC-3-23, Gel	1:1 Stoichiometric, SAC: SBA	Stator Cooling
GR-3-0, GR-3-9, Gel	1:1 Stoichiometric, SAC: SBA	Varied
GR-3-2 FD, Gel	1:1 Stoichiometric, SAC: SBA	Food Grade 21CFR § 173.25
GR-3-5, Macroporous	1:2 Volume, SAC: SBA	Nuclear Grade
GR-3-8, Gel	2:1 Volume, SAC: SBA	Condensate and Nuclear Grades
GR-3-11, Gel	1:1 Volume, SAC: SBA	Drinking Water
GR-3-15, Gel	3:1 Volume, SAC: SBA	Specialty
GR-3-16, Gel with High XL Cation	1:1 Stoichiometric, SAC: SBA	Varied
GR-3-17, Macros or Macro/Gel	1:1 Stoichiometric, SAC: SBA	Nuclear Grade
GR-3-22, Macro/Gel with Morpholine Form Cation	1:2 Stoichiometric, SAC: SBA	Varied
GR-4-6 NG 16 with High XL Li Cation	1:1 Stoichiometric, SAC: SBA	Nuclear Grade
GR-4-9, Gel/Gel with ⁷ Li Cation	1:1 Stoichiometric, SAC: SBA	Nuclear Grade
GR-4-7, Gel/Gel with High XL ⁷ Li Cation	1:1 Stoichiometric, SAC: SBA	Nuclear Grade
GR-4-17, Macro/Macro with ⁷ Li Cation	1:1 Stoichiometric, SAC: SBA	Nuclear Grade

Available as uniform particle size and various grades as listed below.

PRODUCT SUFFIX	GRADE	APPLICATIONS
DM	Demineralization	Demin or Make-up Water Systems, other General Applications
FD	FDA 21CFR § 173.25	Varied
SC	Stator Cooling Grade	Generator Stator Water Cooling System
SG	Standard Grade	Demin or Make-up Water Systems, Radwaste, other General Applications
NG	Nuclear Grade	PWR - CVCS, SFP, SGBD, CP; BWR - RWCU, Condensate
NG ULC	Nuclear Grade Ultra Low Cl	PWR - CVCS, SFP, SGBD, CP; BWR - RWCU, Condensate
US	Uniform Size	Any
US DM	US Demineralization	Demin or Make-up Water Systems, other General Applications
US CGF	US Fossil Condensate	Condensate Polishing in Non-Nuclear
US CG	US Nuclear Condensate	Condensate Polishing in Nuclear
US NG	US Nuclear Grade	PWR - CVCS, SFP, SGBD, CP; BWR - RWCU, Condensate
US NG ULC	US Nuclear Grade Ultra Low Cl	PWR - CVCS, SFP, SGBD, CP; BWR - RWCU, Condensate

APPLICATION ABBREVIATIONS AND DESCRIPTIONS FOR CHART ABOVE

BWR = Boiling water reactor nuclear plant PWR = Pressurized water reactor nuclear plant **DM** = Demineralization and Make-up systems **CP** = Condensate polishing

 $\ensuremath{\mathsf{CVCS}}$ - in $\ensuremath{\mathsf{PVVRs}}$ = Chemical volume and control system SGBD - in PWRs = Steam generator blowdown demineralizer

SFP - in BVVRs and PVVRs = Spent fuel pool RWCU - in BWRs = Reactor water clean up Radwaste = Radioactive waste treatment

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Nuclear QA and ISO Certified

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