Graver Technologies

ECODEX® SELECTION GUIDE

PRODUCT	TYPE	MATRIX	FIBER TYPE	FUNCTIONALITY	TOTAL CAPACITY meq/dry g	% MOISTURE	% IONIC CONVERSION
200 Series							
P-201-H	SAC-H SBA-OH	Styrene DVB Gel	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	5 4	55-75	99 95
P-202-H	SAC-H SBA-OH	Styrene DVB Gel	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	5 4	55-75	99 95
P-205-H	SAC-H SBA-OH	Styrene DVB Gel	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	5 4	55-75	99 95
300 Series							
P-301-N	SAC-NH_4 SBA-OH	Styrene DVB Gel	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	4.5 4	55-75	95 95
P-303-N	SAC-NH_4 SBA-OH	Styrene DVB Gel	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	4.5 4	55-75	95 95
P-305-N	SAC-NH_4 SBA-OH	Styrene DVB Gel	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	4.5 4	55-75	95 95
ECOCOTE							
E-100	N/A	N/A	Cellulose	N/A	N/A	45-75	N/A
E-200	N/A	N/A	Polyester	N/A	N/A	45-75	N/A
E-300	N/A	N/A	PAN	N/A	N/A	45-75	N/A
MERIDIAN							
M2000	SAC-H SBA-OH	Styrene DVB Gel	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	4.8 4	55-75	99 95
M1221	SAC-H SBA-OH	Styrene DVB Gel	PAN	$-SO_3^-$ $-N^+(CH_3)_3$	5 4	55-75	99 95
M2220	SAC-H SBA-OH	Styrene DVB Gel	PAN	$-SO_3^-$ $-N^+(CH_3)_3$	5 4	55-75	99 95
M9220	SAC-H SBA-OH	Styrene DVB Gel	PAN	$-SO_3^-$ $-N^+(CH_3)_3$	5 4	55-75	99 95
M2290	SAC-NH^4 SBA-OH	Styrene DVB Gel	PAN	$-SO_3^-$ $-N^+(CH_3)_3$	4.5 4	55-75	95 95
M2520	SAC-H SBA-OH	Styrene DVB Gel	Polyester	$-SO_3^-$ $-N^+(CH_3)_3$	5 4	55-75	99 95
M2150	WAC-H SBA-OH	Acrylic DVB Styrene DVB	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	7.5 4	55-75	95 95
M2160	WAC-H SAC-H SBA-OH	Acrylic DVB Styrene DVB Gel Styrene DVB Gel	Cellulose	Iminodiacetic $-SO_3^-$ $-N^+(CH_3)_3$	5 4	55-75	95 99 95
M8253	WAC-H SBA-OH	Acrylic DVB Styrene DVB Gel	PAN	$-N^+(CH_3)_3$	7.5 4	55-75	99 95
ECOGUARD							
E1129	SAC-H SBA-OH	Styrene DVB Gel	Cellulose	$-SO_3^-$ $-N^+(CH_3)_3$	4.5 4	55-75	95 95

ECODEX®, MERIDIAN™, ECOGUARD® AND ECOCOTE™

Ecodex precoat products are homogeneous mixtures of Powdex® cation and anion exchange resins with microfine fibers. The Powdex resins may be made from strongly or weakly acidic and strongly or weakly basic ion exchange resins. Strong acid and base resins are the most frequent choices for many applications. The Ecodex products are specially prepared mixtures wherein the Powdex resins and fibers are effectively interacted, through a patented process, to form flocced agglomerates. These products have a high suspended solids loading capacity with excellent permeability, resulting in long runlengths and reduced waste generation. Ecocote, fiber only, products may be used alone or in combination with Powdex precoats.

Ecodex products are precoated in a one-step application. Floc modifiers are not necessary, as the products are formulated with optimal precoat characteristics. They are added to a slurry tank and precoated on filter septa such as, Aegis®, DualGuard® and AFA® filters, among others. Excellent hydraulic properties are achieved with much higher flux rates than can be attained with similarly sized media. The precoat depth is typically 1/4" to 3/8" (~ 6 to 9 mm) although even thinner layers may be used to achieve some high-purity deionization.

Similar to Powdex products, the large surface area provided by the fine particles and the resultant Ecodex floc structure, permit the filtration of suspended solids. The fibrous component maintains the integrity of the precoat and prevents cracking, which could otherwise occur as the suspended solids loading increases. The electrokinetic nature of the Ecodex precoat enables the attraction and adsorption of colloids and color bodies.

Several Ecodex product categories were developed to meet different application demands. Ecodex products with cellulose fiber are available with either hydrogen or ammonium form cation exchange resin. The hydrogen form is used in the Ecodex 200 series, designed for neutral pH systems. For high pH systems, the Ecodex 300 series contains ammonium form cation. The Ecodex Meridian™ series is a family of specialty products, with unique properties. Some of the Meridian products contain polyacrylonitrile (PAN) fiber while polyester or other synthetic fibers are used in others.

Additional products incorporate special selective resins. The Ecodex Ecoguard® series is designed for economical use in cost-conscious applications. Ecocote products are available in cellulose and synthetic fiber versions.

APPLICATIONS

Condensate Polishing

High flow rate condensate polishing was one of the original applications for Ecodex products. The Ecodex 200 series was designed for neutral pH condensates, like BWR's. For high pH systems such as most fossil plants and PWR's, the Ecodex 300 series should be used. Ecoguard types may be used when cost is the primary consideration.

Fuel Pool and Reactor Water Cleanup

Ecodex P-205-H and Meridian products are recommended for the removal of silica and other dissolved solids from the reactor. Fuel pool parameters are maintained by the continuous filtering and cleaning with P-201-H and Meridian products.

Radwaste

Depending upon the specific need, the 200 series and Meridian products are ideal for the removal of ionic species such as iodine, cobalt and silica, as well as organics reduction.

RO Pretreatment

Several of the Ecodex 200 series or Meridian products may be used to pretreat water prior to reverse osmosis units. The products can be applied to standard filters or precoated on sand or mixed media filters. Thicker layers can be used on the media type filters. The media filter will remove particulates and the Ecodex will provide organic and foulant reduction, protecting the RO membrane and providing extended membrane life and reduced operating cost.

Please contact Graver Technologies today at
1-800-249-1990 (24-hour service) or
E-mail: info@gravertech.com
Visit our website: www.gravertech.com

All Graver Technologies resins are manufactured in accordance with a quality assurance program meeting the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B (10CFR50 App. B). Our resins are all individually QC tested assuring quality and purity.

Graver Technologies

200 Lake Drive,
Glasgow, DE 19702 U.S.A.

800-249-1990
302-731-1700
Fax: 302-731-1707

e-mail: info@gravertech.com
web site: www.gravertech.com