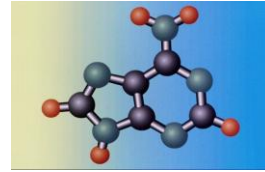




PO Box 540562  
 Merritt Island, FL 32954-0562  
 866-449-0324

## EcoSense Filtration Technology



### ESI MZ Stormwater Media Modified Alumino Silicate

ESI MZ is a patented, modified alumino silicate that is designed to absorb anions such as chromate, selenate, sulfate, hydrocarbons (e.g. benzene, toluene, and xylene), heavy metals (e.g. lead and cadmium), and various petroleum products from aqueous waste streams.

#### APPLICATIONS

Groundwater  
 Stormwater  
 Manufacturing Process Water  
 Paint Stripping  
 Electroplating  
 Wood Treating  
 Water from oil production wells  
 Effluent Polishing

#### CONTAMINANTS REMOVED

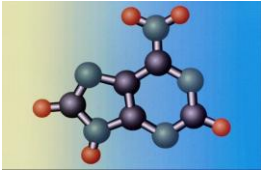
diesel fuel, gasoline, oils, PCB's, BTX  
 Ortho-PO<sub>4</sub>, Heavy metals, PCE, THM's,  
 oil, grease  
 solvents, heavy metals  
 heavy metals  
 pentachlorophenol, creosote  
 oil, diesel fuels  
 Fecal Coliforms, viruses, pharmaceuticals

#### How ESI MZ Works

The basic concept involves imparting hydrophobicity to alumino silicate substrate by coating it with a strongly bound hydrophobic compound. Other hydrophobic chemicals, such as hydrocarbons, prefer to combine with the surface-modified particles rather than maintaining suspension in water. The treated alumino silicate also absorbs inorganic oxyanions such as chromate, selenate and sulfate while maintaining its natural sorption capacity for heavy metals. The base media is an alumino silicate with an exceptional cation exchange capacity. The modifying agent is a strong cation that replaces other cations on the surface producing a surface anion exchanger.

## EcoSense Filtration Technology

### ESI MZ Stormwater Media, Modified Alumino Silicate



### Why ESI MZ is Superior to Tailored Clays

Tailored clays have been used successfully for a number of years to absorb organic contaminants. ESI MZ, because it is not a clay medium, but an alumino silicate, is a better alternative. When water passes through a clay medium, the clay particles expand reducing the inter-particle space and lowering the permeability of the clay medium. Indeed, the tailoring process itself, due to coagulation of the tailoring agent may cause a further reduction of permeability. The ESI MZ alumino silicate is a large network of open channel ways, similar to a sponge, with uniform holes and a high cation exchange capacity. Unlike clay particles, this structure is rigid and stable (even under aqueous conditions) allowing more contaminants to be absorbed in its open channel ways.

### Examples of the chemistry ESI MZ can be effective in removing from waste streams:

Fecal Coliforms and other pathogens	Anthracene	naphthalene	benzene	
non-ionic surfactants	chloroform	Penenthrene	creosote	
oil/grease	ethyl benzene	pentachlorophenol	diesel fuel	PCE
Flourene	pyrene	fulvi acids	solvents	
toluene	humic acids	indeno pyrene	methylene chloride	
THMs	aluminum	magnesium	antimony	
manganese	Arsenic	mercury	barium	
nickel	cadmium	Selenium	calcium	
silver	chromium	tin		

### Properties

Cation exchange capacity	2.2 meq/g
Bulk density (treated)	55 bs/ft <sup>3</sup>
Hardness	5.1 mohs
Pore size	4.0A
Thermal stability	1,202F
Specific surface area	40 m <sup>2</sup> /g
Mesh size	4x6, 6x14

WATER		POLLUTANT CONCENTRATION (mg/l)					
		COPPER		ZINC		ORTHO PO <sub>4</sub>	
SOURCE		IN	OUT	IN	OUT	IN	OUT
Catch Basin Sump	ESI•MZ	0.03	0.02	0.04	0.02	0.37	0.07
	PuraSense™	0.03	0.02	0.04	0.01	0.37	0.09
		PERCENT REMOVAL					
WATER		COPPER		ZINC		ORTHO PO <sub>4</sub>	
SOURCE		%		%		%	
Catch Basin Sump	ESI•MZ	33		50		81	
	PuraSense™	33		75		76	