



# Glass Media

Using ECOsmarte's glass water filtration media not only results in outstanding performance, but in real cost benefits over the life of a filter bed:

## Savings with Glass

Based on Filtration for a 24" Pool Filter

Product	Cost	Life	Cost over 9 Years
Glass	\$300	9 yrs	\$300*
Sand	\$60	3 yrs	\$180
ZEOLite	\$150	3 yrs	\$450
DE	\$15	2 mo	\$1,500* (1 set grids)

\*Glass provides added savings due to reduced chemical use, and easier/less frequent backwashing. These costs are not reflected.

## Glass at a Glance

Characteristic	Glass	Zeolite	Sand
Environmentally sound	●		
Long lasting (3x longer)	●		
Ionically charged (traps small particles)	●		
Removes twice the iron and manganese	●		
Self-sterilizing	●		
Reduced chemical use	●		
Less likely to block or channel	●		
Requires a salt bath		●	
Requires more water for backflush		●	●
Requires more chemicals		●	●
Class II Carcinogen		●	●
Harmful to breathe		●	●
Surface houses bacteria		●	●
Strip mined: depletes our environment		●	●

## Glass Filtration Media

**Finely crushed recycled glass for pool, industrial, and environmental filtration that provides outstanding water clarity and quality - a direct replacement for sand or Zeolite in both freshwater and saltwater pools.**

### Superior Cleaning

- Cleaner, lighter weight, highly angular crushed recycled glass provides an amazing 25% improvement in turbidity removal over silica sand, and is equivalent to Zeolite.
- Crushed glass filtration media generally removes finer particles from water than silica sand of an equivalent grade, and is comparable to properly configured Zeolite.
- Weak negative surface charge holds fine particles and positively charged iron and manganese ions that are easily released upon backwashing. Perfect for well water pools.
- Crushed glass filtration media is less likely to block or channel than silica sand or Zeolite and will not support moss or fungus growth in the media.

### Safer to Use

- Glass contains no crystalline silica—resulting in better lung protection for employees and a far healthier environment.
- Glass grains are amorphous, smooth particles that have higher attrition strength and do not permanently trap bacteria in cracks.
- Use of crushed glass filter media will lower your consumption of chlorine and coagulants. Coagulants and metal removers foul Zeolite and are compatible with glass.
- Manufactured from 100% recycled glass

### Lower Operating Costs: Easy Install and Maintenance

- Labor and time savings at install.
- Improved performance for pressure or gravity-flow filters
- Weighing 20% less than sand, ECOsmarte® crushed glass filtration media provides more filter volume per pound.
- Lower density requires up to 20% less media to fill your filter vessel.
- Better permeability—backwashes with up to 25% less water, saving down-time and water/sewer charges.
- Because glass cleans better, you save energy, operating costs, and extend the life of your filter.
- Comparable initial cost to Zeolite.



### Technical Data

- **Specific Gravity**  
2.50
- **Bulk Density**  
75 to 80 lbs/cu.ft.
- **Effective Size**  
Ranges from 0.30 to 1.10 mm
- **Coefficient of Uniformity**  
Ranges from 1.45 to 1.80
- **Estimated Sphericity**  
Approximately 0.40
- **Porosity**  
Typically 48%
- **Shape**  
Angular to sub-angular
- **Permeability**  
VF25 typically  $4.0 \times 10^{-1}$  cm/sec
- **Physical Composition**  
Amorphous soda-lime glass
- **Typical Chemical Composition**  
SiO<sub>2</sub> .....73%  
Na<sub>2</sub>O ..... 14%  
CaO .....10%  
MgO .....<1%  
Al<sub>2</sub>O<sub>3</sub> ..... <1%  
SO<sub>3</sub> .....<1%

### Packaging

- 50 lbs/240 kg plastic bag
- 40×50 lbs bags = 1 pallet
- 800×50 lbs bags =  
1 truck/1 container

### For Use in Residential, Commercial, Industrial, and Environmental Applications

ECOsmarte® glass is made from 100% recycled glass. It is crushed, dried at 250 degrees Fahrenheit, and screened into various sized fractions to achieve optimal filtration properties.

As the grains are nearly all angular in shape and have a fairly high degree of sphericity, the filter bed tends to have more opened packing resulting in better permeability than a filter of spherical silica grains.

Because glass is amorphous and has no internal crystal structure, the particles are homogenous and have no grain boundaries. This gives glass more resistance to breakdown through filtration backwashing cycles.

Furthermore the lack of grain boundaries minimizes cracks where bacteria can lodge and resist flushing in back washing.

Glass particles have a slight negative charge on their surface, which tend to hold onto fine particles during the filtration cycle. Upon back washing, this weak charge releases these fine particles to the effluent thereby contributing to better filtration action. There is less water to the better permeability of a glass filter.

As crushed glass is lighter than silica sand, between 15 and 20% less glass is needed to fill a filtration unit. With the better filtration characteristics and lower density glass is a superior filtration media for many filtration applications. It can be used in swimming pool and spa filters as well. Glass filter media is now being used in storm water runoff filtration systems as a replacement for silica sand.

Using glass not only results in good performance, but in real cost benefits over the life of a filter bed.

