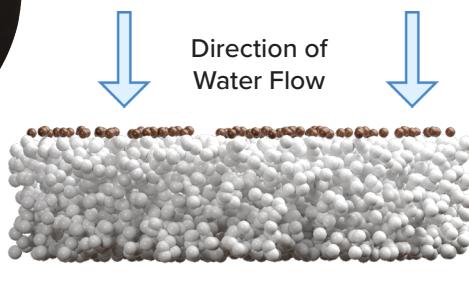
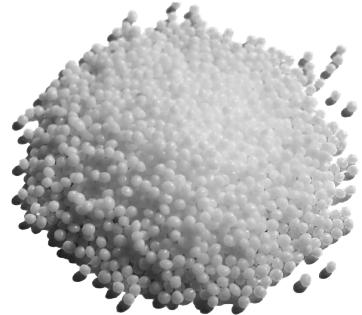




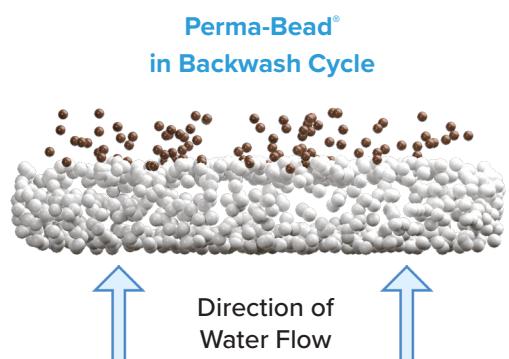
Perma-Bead® media is a sinking plastic filtration media specifically designed to replace sand in rapid sand filters. Perma-Bead® media has no flat or porous surfaces that can stick together, as occurs with sand or other angular or porous media.

The smooth ellipsoid shape and central bulge of each bead prevent adhesion and bridging. This unique egg shape also creates large interstitial spaces within the Perma-Bead® media bed, trapping large quantities of debris and extending the time between backwash cycles while minimizing water use.

The result is a superior filtration media that can be used in organically loaded systems without the clogging and channeling problems associated with sand media.



Perma-Bead® in Filter Cycle



Perma-Bead® in Backwash Cycle

SURFACE PROPERTIES

The very hard surface of Perma-Bead® media prevents bacteria from etching into the surface, while the extremely smooth finish allows even the stickiest waste to be scrubbed off when the media bed fluidizes during backwash.

As Perma-Bead® media ages, it becomes even more effective at removing fine particles as a thin film of nitrifying bacteria coats each bead. While this same biological activity causes bridging, clogging, and channeling in other media, with Perma-Bead® media it enhances filtration by trapping smaller particles that are easily released during the backwash cycle.

PHYSICAL PROPERTIES

Perma-Bead® media is manufactured from high-quality, stable, inert plastic that is completely safe for use in aquatic life support systems. The media is engineered with an ideal density that enables optimal fluidization during backwash, releasing trapped particles while preventing excessive water loss.

Perma-Bead® media never requires replacement and can be repeatedly sterilized using chlorine or muriatic acid without any adverse effects.

HOW TO CONVERT SAND TO PERMA-BEAD®

No plumbing changes are required when converting a sand filter to Perma-Bead® media. Simply remove the sand and pour in the Perma-Bead® media.

To determine the required volume, take the sand filter manufacturer's sand weight rating (in pounds), multiply by 0.6, and divide by 55. Round to the nearest whole number to determine the number of cubic feet required.

Perma-Bead® media is sold in 1 cubic-foot boxes (12" x 12" x 12", 55 lbs).



PERMA-BEAD® APPLICATION

DISPLAY PONDS AND WATER FEATURES



Koi ponds, water gardens, and landscape water features for commercial and residential projects.

REPLACE SAND AND PREVENT CLOGGING IN ANY SAND FILTER - NO PLUMBING CHANGES REQUIRED. SIMPLY REMOVE THE SAND AND INSTALL PERMA-BEAD® MEDIA. PROVEN IN THOUSANDS OF FILTERS FOR OVER 30 YEARS

PROVEN AND PERMANENT SOLUTION

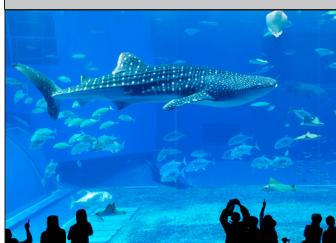
Perma-Bead® media is a permanent filtration solution that has been successfully and continuously used in thousands of filters for over 30 years. Unlike sand, Perma-Bead® media never needs to be replaced.

SUPERIOR WATER QUALITY

Filters using Perma-Bead® media consistently deliver exceptionally clear, healthy water—especially in organically loaded systems containing live aquatic animals.

Perma-Bead® media provides superior filtration performance compared to sand by effectively releasing trapped organic particles during the backwash cycle. While sand filtration performance declines over time, filtration performance with Perma-Bead® media improves over time.

PUBLIC AQUARIUMS & ZOOS



Fish displays, exhibits, quarantine systems, and holding tanks.

AQUACULTURE SYSTEMS



Commercial and research applications including incoming water filtration, recirculating systems, fish holding and breeding systems.

COMMERCIAL AND INDUSTRIAL

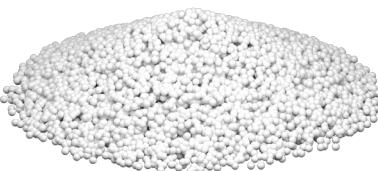


Commercial swimming pools, water displays, and industrial process treatment.

SAVE WATER, MONEY AND TIME

Filters using Perma-Bead® media operate at lower differential pressure than sand filters, allowing pumps to run cooler and more efficiently, reducing energy consumption and extending pump life.

Improved filtration performance reduces both the frequency and duration of backwash cycles, saving thousands of gallons of water per year. With a service life exceeding 20 years, Perma-Bead® media eliminates the labor and cost associated with sand replacement.



**COMPLETE "PLUG AND PLAY" PERMA-BEAD® FILTRATION SYSTEMS AVAILABLE
CALL FOR FREE SYSTEM DESIGN SERVICES AND
TECHNICAL SUPPORT**

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