

# Omni-SORB™ Filter Media

## Providing iron and manganese removal

The Omni-SORB™ granular filter media from Severn Trent Services was specifically designed to provide removal of iron and manganese compounds from water and wastewater supplies. Unlike other iron (Fe) and manganese (Mn) removal media, Omni-SORB is not a processed mineral. It is an engineered product using refined manganese that has high catalytic activity for oxidation and adsorption of these metals. The high grade manganese is bound onto a pure silica sand substrate in the 20-40 mesh range. These catalytic properties allow the media to be efficiently used without the addition of potassium permanganate ( $K_2MnO_4$ ), a strong oxidant required for Fe and Mn removal with greensand and other medias.

Omni-SORB media catalyzes oxidation of soluble reduced Fe and Mn and either filters out precipitates or reversibly adsorbs the oxidized metal. Its efficiency is enhanced by predosing the water with chlorine or hypochlorite. The Omni-SORB media can also withstand higher operational temperatures and differential pressures, leading to longer run lengths and allowing for more operational margin of error. Severn Trent Services offers the Omni-SORB media in easy-to-handle ½ cubic foot bags or 1 metric ton (2205 lbs) bulk sacs. The media is NSF Standard 61 approved.



### Omni-SORB Applications

Omni-SORB is employed for the removal of Arsenic (As) from high iron bearing waters. The coagulation/filtration process reduces two contaminant levels simultaneously – Arsenic is lowered well below the new maximum contaminant level (MCL) of 10 µg/L, and Fe is lowered well below the secondary standard of 300 µg/L. The process works efficiently when the water's iron-to-arsenic weight ratio exceeds 25 ( $Fe/As > 25$ ). Simultaneous removal of As occurs because when Fe is oxidized, it precipitates, and that solid will adsorb As present in the water.



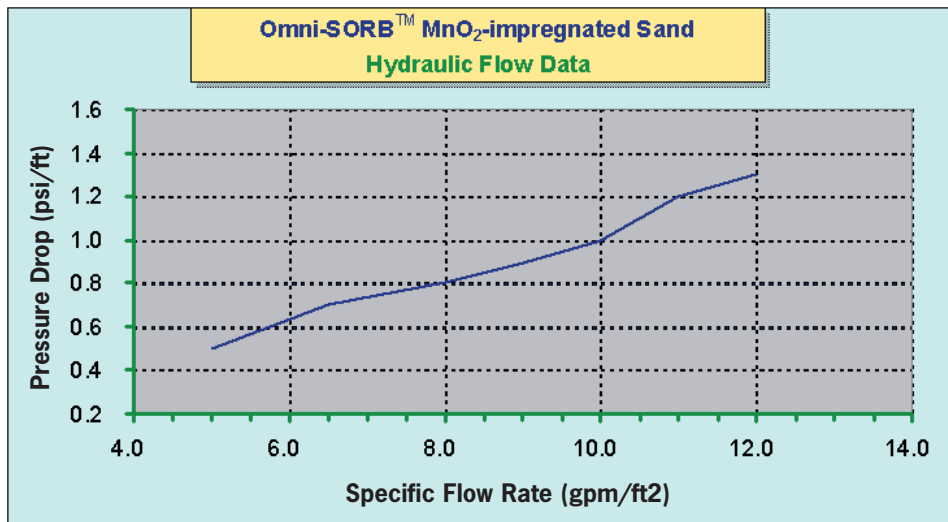
## Hydraulic Flow Data

### Omni-SORB Applications

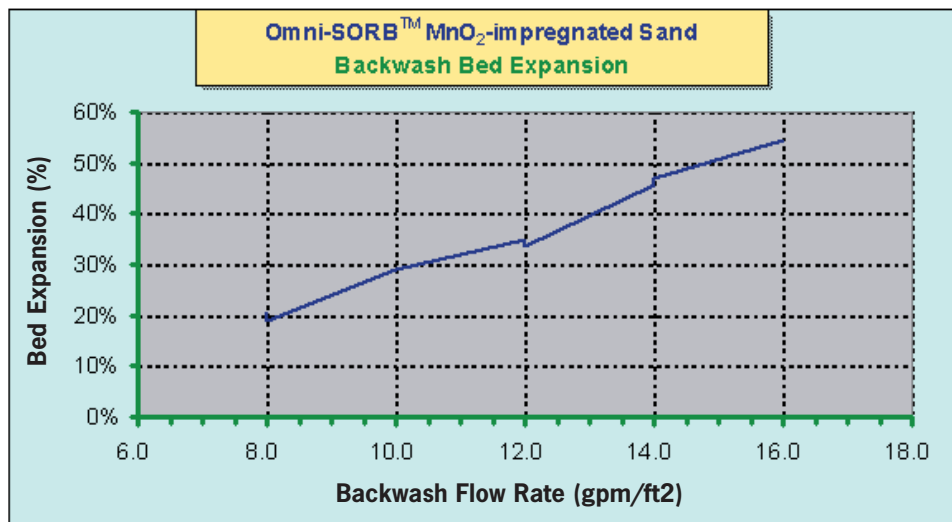
- Removal of Iron up to 10 ppm
- Removal of Manganese up to 5 ppm
- Removal of Hydrogen Sulfide up to 3 ppm
- Expensive, hazardous oxidizing agents not required
- Not recommended for tannin, organics and Fe or Mn bacteria removal
- Simultaneous arsenic and iron removal from high Fe water sources

### Omni-SORB Operating Parameters

- Typical service loading rates of 9-11 gpm/ft<sup>2</sup>
- Media backwashing rates of 12-14 gpm/ft<sup>2</sup> for 10 minutes
- Backwashing frequencies of 16-72 hours depending upon Fe, Mn or H<sub>2</sub>S concentrations
- Media life of 6-8 years



## Backwash Bed Expansion Data



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