

# Introducing the AdEdge AD26 Series Systems

adedge

For Arsenic, Iron, Manganese, and Sulfide (AIMS) Reduction for Water Supplies



The New Option for Effective Removal of Arsenic, Iron, Manganese and Sulfide from Water Supplies.

Adedge's new AD26 Systems for commercial and community water systems are rapidly emerging as the preferred alternative for removing AIMS. These systems are ideal for eliminating nuisance parameters and improving overall water quality. The integrated oxidation and filtration technology utilizes a proprietary, highly active, NSF 61 Certified manganese dioxide media. It is packaged in a pre-engineered skid mounted treatment system for simple installation and use. The targeted contaminants are co-precipitated and filtered in the media bed, which is periodically backwashed.

The systems have been designed by AdEdge specifically for well head treatment. The Adedge AD26 systems are employed as stand alone systems for the removal of iron, manganese, and sulfide, and arsenic if it coexists with high levels of iron. Contact Adedge for specifics.

Whether you need to comply with the secondary contaminant rule or simply want to improve the quality of your water, the AD26 system may be the solution.

## ADVANTAGES

AIMS are common in groundwater environments and can produce unpleasant drinking water, undesirable health effects and produce staining of household appliances and clothing. The Adedge AD26 Systems offer a more reliable and efficient way to remove AIMS. The following are several advantages over conventional approaches using traditional medias:

- *Much higher filtration rates in gpm/sq ft compared to manganese greensand resulting in significantly smaller systems and footprint*
- *Smaller systems and smaller footprints save you money on equipment costs, building size and real estate.*
- *Superior handling properties, stability, and NSF 61 certification*
- *No permanganate or coagulant addition needed*
- *Custom solutions to fit your site needs*
- *Enhanced kinetics that allow short contact times*
- *Long life typically over 5 years before replacement*
- *Performance over wide range of incoming water quality*
- *Ideal complement to arsenic adsorption systems that results in longer arsenic media life and lower operating costs*
- *High catalytic / oxidation activity for co-precipitation*
- *Removal efficiencies 95% or better of iron and manganese*



**Q: How does the AD26 system remove iron and manganese?**

**A:** *Through mechanisms of oxidation and co-precipitation, these contaminants are efficiently removed in the AD26 media beds. Depending on the specific water chemistry, the system can achieve treatment efficiencies for these contaminants to meet the secondary drinking water standards (<0.3 mg/L Fe; <0.05 mg/L Mn).*

**Q: How does the AD26 system remove sulfide?**

**A:** The AD26 media converts H<sub>2</sub>S to sulfur and then physically filters the sulfur. The precipitated sulfur is removed from the vessel during backwash.

**Q: How does the AD26 system remove arsenic?**

**A:** Arsenic is coprecipitated with iron onto the media as ferric arsenate. Contact Adedge for additional details.

**Q: How does it differ from other processes such as Manganese Greensand, Pyrolox, or Water Conditioning?**

**A:** The media is a NSF 61 certified solid phase oxidation mineral. The systems have a small footprint compared to other technologies as design flow rates are 10-12 gpm / square foot of bed area. The technology does not require a long contact time, coagulants, or permanganate addition /regeneration like greensand and other oxidation processes. No brine or salt is needed and the process does not generate hazardous waste.

**Q: Is chlorine needed for the system and does the media need replacement?**

**A:** A low Hypochlorite dose is recommended for optimal performance of the AD26 systems. It enhances the removal process, improves longevity, and keeps the surface of the media oxidized to prevent buildup of solids. Media life is typically 5+ years before replacement.

**Q: How do I determine the best way to achieve my treatment goals for my particular site?**

**A:** Begin first by obtaining a complete site specific water profile from a qualified lab. This information can then be submitted to AdEdge technical support to discuss your application, equipment sizing, and costs.

Operating Conditions	
pH Range	6.5 – 9
Treatment Goals	< 0.3 mg/L Fe; < 0.05 mg/L Mn < 0.010 mg/L As
Service Flow Rate	10-12 gpm / Sq Ft
Backwash Flow Rate	18-20 gpm / Sq Ft
Bed Expansion	20-30% typical
Pressure Drop	< 5 psi typical across system
Oxidant	Hypochlorite feed for best results
Oxidant Contact Time	30 seconds
Typical Oxidant Dosage	0.5 – 2.0 ppm
Backwash Frequency	Site Specific (1-2X per week typical)
Media Life Expectancy	Site specific; typically 5+ years



**Q: What previous experience has AdEdge had using the AD26 for iron removal?**

**A:** Dozens of facilities in North America have utilized the technology. One of the most notable project is the WWII Memorial. The water is pumped from the groundwater feed pumps and to the dual vessel AD26 system following in-line hypochlorite (chlorine) injection. Hypochlorite solution is fed in-line through a computer controlled metering and feed system capable of real time chlorine residual measurement and control. Iron and manganese are oxidized and filtered/adsorbed with the proprietary AD26 catalytic media based system.



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