

BAYOXIDE® E33 GRANULAR FERRIC OXIDE

for Arsenic and Heavy Metals Reduction for Residential Applications

AdEdge Water Technologies’ Bayoxide® E33 Adsorption media is the industry standard for arsenic reduction that reduces up to 99% of total arsenic, including arsenic (III) and arsenic (V). It is also effective in reducing other heavy metals such as lead, cadmium, chromium, antimony, and others. This high performing iron-based granular media is the standard in the industry showing consistently higher capacities than other commercially available adsorption medias.

This AdEdge product is designed for commercial and residential POE and small systems to meet the EPA arsenic standard of 10 ppb. Developed in the mid-nineties, this ferric oxide-based (GFO) media has been successfully deployed in hundreds of large-scale drinking applications since 1999. Additionally, this product has been successfully installed in thousands of POE and POU systems around the world. It is the premier product of choice for POE whole-house drinking water treatment systems for reliable, cost-effective, and proven reduction of arsenic.

FEATURES & BENEFITS

Removal up to 99% of total arsenic in water including As (III) and As (V)	Effective over a broad water chemistry
Simple application for drinking water and commercial installations	2 - 2.5 times lighter than other iron-based media
Arsenic is not released or discharged into backwash water	Reliable performance, low maintenance
Adaptable add-on to existing equipment	Effective for the removal of antimony, lead, and other heavy metals
Imparts no harmful chemicals into the treated water product	No salt or regeneration needed



Example of Bayoxide® E33 Granular Ferric Oxide Media

TECHNICAL SPECIFICATIONS

Bayoxide® E33 provides cost-effective centralized arsenic treatment with a typical life of 2 - 3+ years before it requires replacement. This media exhibits a high operating capacity across a wide range of pH, influent arsenic concentrations, and flow rates. It is simple to apply in standard POE vessels with typical flow rates of 2 to 20 gallons per minute (gpm). Once the media is exhausted, E33 can be discarded as a non-hazardous waste (specific state requirements must be considered). Media is easy to handle and can be stored and shipped dry.

Physical Properties	E33 Media
Matrix	Iron Oxide Composite
Physical Form	Dry granular media
Color	Amber
Particle Size Distribution	10x35 or 14 x 18 Mesh
Moisture Content	< 15% by weight
Packaged	Dry
Weight per cubic foot	30 pounds*

*Approximate

ARSENIC REDUCTION

POE DATA SHEET



Arsenic Removal Performance (POE)	
Arsenic Concentration Range ^{1,2}	10 - 100+
Arsenic Species Reduced	As (III) and As (V)
Removal Efficiency	Up to 99%
Estimated Media Life	2 - 3+ years
Expected Life Bed Volumes ³	15,000 - 125,000
Spent Media Disposal ⁴	Non-hazardous waste
Empty Bed Contact Time	3 minutes typical

Notes:

1. Typical arsenic contamination in the United States are < 50 ppb.
2. Capable of removing higher As concentration. Consult AdEdge for applications above 100 ppb.
3. Actual bed volumes are based on water quality.
4. Reference U.S. EPA TCLP protocol.

Comparison of Point of Entry Treatment Alternatives			
Feature	Anion Exchange	Reverse Osmosis	Medallion Series E33 Adsorption System
Type of Arsenic Treated	As (V)	As (V)	As (III) and As (V)
Pre-oxidation Step Required for Arsenic Removal	Yes	Yes	No
Loss (waste) of Water	5%	25 - 75%	None
Chemical Use	Yes, salt	Membrane Cleaning	< 1 %
Frequency of Regeneration	Approx. every 2000 - 4000 gallons	Not Applicable	Not Applicable
Hazardous Waste Generation	Yes	Concentrated Arsenic Reject	None
Off-Taste Potential	Yes	No	No

TREATMENT CONDITIONS

Parameter	Value
pH Range	5.5 - 8.5
Arsenic	< 300 ug/L
Iron	< 0.3 mg/L
Manganese	< 0.05 mg/L
Phosphate	< 0.5 mg/L
Silica	< 30 mg/L
Sulfate	< 100 mg/L
Sulfide	< detect mg/L
TSS	< 5 mg/L
Fluoride	< 1 mg/L
Hardness	< 300 mg/L
Turbidity	< 5 NTU

Notes:

1. Recommendations for best performance.
2. Water > 8.5 pH may require pH adjustment for best results. Contact AdEdge for technical support.
3. For all applications, completed AdEdge POE profile sheet to pre-qualify site for proper use; consult AdEdge authorized dealer or distributor for details.