

## Bayoxide® E33 Adsorption Media — Arsenic Reduction

AdEdge Technologies' Bayoxide E33 media is the industry standard for arsenic reduction that reduces up to 99% of total arsenic, including both arsenic (III) and arsenic (V). This revolutionary new iron-based granular adsorption media has 4 to 10 times the capacity of many adsorption medias. AdEdge's product is specifically 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 product has been successfully used in large-scale drinking water applications since 1999. The new E33 media can be discarded when spent and requires no chemicals or regeneration. It has become the premier product of choice for POE whole-house drinking water treatment systems for reliable, cost-effective, proven reduction of arsenic.

|   |   |
|---|---|
| ✓ Removal of up to 99% of total Arsenic in water, including As (III) & As (V) with no wasting of water.       | ✓ NSF 61 product listing (see AdEdge for listing site/product details)<br>✓ Effective over broad water chemistry.               |
| ✓ Spent media discarded as non-hazardous household waste.   | ✓ Simple application for whole house POE applications for arsenic removal.  |
| ✓ Reliable performance, low maintenance<br>✓ Adaptable add-on to water softening or other existing equipment. | ✓ 2 - 2.5 times lighter than other iron-based media; easily backwashable; arsenic not released or discharged in backwash water. |
| ✓ No salt, chemicals or regeneration needed   | ✓ Imparts no harmful chemicals into the treated product water.  |

### TECHNICAL SPECIFICATIONS

E33 provides cost effective centralized arsenic treatment with a typical life of 2-3+ years before replacement. The media exhibits 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 2-10 gallons per minute.

Once the media is exhausted, E33 can be discarded as a non-hazardous waste (specific state requirements should be consulted). Media is easy to handle and can be stored and shipped dry.

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Bayoxide® E33

| Physical Properties        | E33 Media            |
|----------------------------|----------------------|
| Matrix                     | Iron Oxide Composite |
| Physical Form              | Dry granular media   |
| Color                      | Amber                |
| Particle Size Distribution | 10x35 mesh           |
| Moisture Content           | < 15% by wt.         |
| Packaged                   | Dry                  |



| Arsenic Removal Performance (POE) |                     |
|-----------------------------------|---------------------|
| Arsenic concentration range       | 10 – 100+ ppb       |
| Arsenic species reduced           | As (III) and As (V) |
| Removal efficiency                | Up to 99%           |
| Estimated media life              | 2 to 3+ years       |
| Expected life bed volumes         | 15,000 to 125,000   |
| Spent media disposal              | Non-hazardous waste |
| Empty bed contact time            | 3 minutes typical   |

Typical arsenic contamination in U.S. < 50 ppb.

Capable of removing higher As concentrations. Consult AdVantEdge for applications above 100 ppb.

Actual bed volumes based on water quality.

Reference US EPA TCLP protocol

## Recommendations for best performance

| Parameter             | Value <sup>1</sup> |
|-----------------------|--------------------|
| pH range <sup>2</sup> | 5.5 - 8.5          |
| Arsenic <sup>3</sup>  | < 100 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         |
| Sulfides              | < detect mg/L      |
| TSS                   | < 5 mg/L           |
| Fluoride              | < 1 mg/L           |
| Hardness              | < 300 mg/L         |
| Turbidity             | 5 NTU              |

Water > 8.5 pH may require pH adjustment for best results. Contact AdVantEdge for technical support.

For all applications, complete AdVantEdge POE profile sheet to prequalify site for proper use; consult AdVantEdge Authorized dealer or distributor for details.

Pretreat for tannins if present prior to adsorption.

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## RESIDENTIAL SIZING PARAMETERS

| System Design Parameters                       | 5 GPM dual tank          | 5 GPM single tank | 10 GPM single tank |
|--|--------------------------|-------------------|--------------------|
| Typical Tank size (inches)                     | 10 x 42                  | 12 x 52           | 14 x 65            |
| Media Volume (cubic feet)                      | (2) 1-ft <sup>3</sup> ea | 2 ft <sup>3</sup> | 4 ft <sup>3</sup>  |
| Operation mode                                 | 2 in series              | Single tank       | Single tank        |
| Media Type                                     | E33S                     | E33S              | E33S               |
| Underbedding                                   | gravel                   | gravel            | gravel             |
| Typical Freeboard (%)                          | 40                       | 40                | 40                 |
| Backwash flow rate (gpm/ft <sup>2</sup> )      | 4                        | 5                 | 10                 |
| Backwash cycles (per month)                    | 2x                       | 2x                | 2x                 |
| Est. gallons per day <sup>3</sup>              | 300                      | 300               | 500                |
| Est. gallons to breakthrough <sup>2</sup>      | 374,000                  | 374,000           | 561,000            |
| Estimated time to media changeout <sup>1</sup> | 2-3+ years               | 2-3+ years        | 2-3+ years         |
| Max flow rate (gpm)                            | 5                        | 6                 | 10                 |

Media life based on gallon usage and water profile (Above is example only; example assumes 40 ppb arsenic, 25,000 bed volumes); will vary by individual site based on water quality and usage

AdVantEdge recommends effluent testing and monitoring program to determine media breakthrough.

Average gallons per day will be site and usage specific.



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