Frequently Asked Questions (FAQs)

By AdEdge Technologies

Adedge Technologies Bayoxide® E33 Arsenic Adsorption Media for Residential Point-of-Entry (POE) Systems

Q. What is Bayoxide E33 media?

The product is a dry, granular or pelletized, iron oxide adsorption media. It has been designed specifically for reducing arsenic and is ideal for both drinking and process water applications.

Q. Does Bayoxide E33 reduce both forms of naturally occurring arsenic?

Yes. Bayoxide E33 media has capacity for both arsenic (III) and arsenic (V); however, the media is more effective for arsenic (V). For situations where 100% arsenic (III) is present, AdEdge recommends pre-oxidation for enhanced performance since the total capacity of the media for arsenic (V) is greater than for arsenic (III).

Q. How is the product applied for a residential application?

The media is typically employed within a standard, conventional-size cylindrical fiberglass tank with a top-mounted valve, laterals, riser and underbedding. Further sizing and use information is provided in AdEdge Technologies product bulletins.

Q. Does Bayoxide E33 media impart any odor, taste or extractables into the water?

No. Bayoxide E33 media meets NSF/ANSI drinking water Standard 61which confirms the safety and quality of products in contact with drinking water.

Q. How long will the media last?

The media life is dependent on several key factors: water chemistry, daily water usage, contact time, and treatment goals. A typical 5 to 6 gpm design flow POE residential system treating arsenic 10 to 50 parts per billion (ppb), containing 2 cubic feet of media will typically last two to four years depending on the arsenic concentration, gallons per day usage, pH, and other factors. Treated water testing will determine the appropriate changeout frequency.

Q. **What do I need to know about the water chemistry before properly applying this product?**

The product is intended to be prescribed only by qualified AdEdge Technologies dealers or distributors. The following analyses (at a minimum) are needed to predict performance: arsenic, pH, iron, manganese, silica, phosphate, and sulfides. Although a complete water profile would be ideal, these are the most important parameters for residential applications.

Q. **How is the spent media disposed?**

The exhausted media has been tested and has passed the US EPA's standard protocol for determining hazardous wastes. The Toxicity Characteristic Leaching Procedure (TCLP) and Waste Extraction Test (WET) demonstrate Bayoxide E33 to be a non-hazardous waste for disposal in a sanitary landfill.

Q. Must iron and manganese be removed prior to treatment?

Like most adsorption products, Bayoxide E33 works best if iron and manganese are minimized before adsorption due to potential fouling of the adsorption bed with iron. Pretreatment for iron and

manganese is recommended to 0.5 mg/l and 0.05 mg/l, respectively, prior to arsenic adsorption for best results. AdEdge has considerable experience with iron and manganese treatment. Contact AdEdge for suggested pretreatment options.

Q. Does the media need to be backwashed? If so, how often?

Periodic backwashing is recommended for two reasons. The media over time, can compact and preferential channels can develop. Additionally, sediment or suspended solids (if present) may accumulate in the adsorption media. To prevent excessive pressure drop or channeling, gentle backwashing to lift, or fluff, the bed is performed periodically. Backwashing for a residential system is typically performed once a month at 9-11 gpm/square foot for less than 15 minutes. Since arsenic is chemically bound to the media, no arsenic is removed or desorbed during the backwashing cycle. The backwash water typically has very low or non-detectable levels of arsenic.

Q. Can the adsorption media be used in conjunction with an RO system or water softener?

Yes. The preferred location of the arsenic treatment is placement after the softener or RO system.

Q. Would pH adjustment ever be recommended?

The product has a very wide operating pH range from 5.5 to 8.5. The media exhibits a higher arsenic capacity with decreasing pH. Therefore, above 8.5 pH, AdEdge recommends lowering the pH for increasing the longevity of the media. Contact AdEdge for details.

Q. How do I monitor for arsenic?

Samples can be analyzed by a qualified laboratory for total arsenic using several different methods for typically $15 to $30 per sample. Field test kits are also available that can detect the presence of arsenic at very low concentrations (< 5 ppb). Field test kit result can be used as inexpensive indicators of system performance, but should be used in conjunction with actual laboratory results. More information can be provided about test kits by contacting AdEdge.

Q. How do I know if the system is working and what type of monitoring should be performed with residential systems?

Based on the potential health concerns with arsenic, a monitoring program is essential for all POE systems installed. The designated water dealer or service providers are responsible to test the system initially after installation to determine if treatment goals are being met and routinely thereafter throughout the operating life. Sampling frequency may vary depending on the site specifics and state requirements. A laboratory sample of the effluent is recommended at least quarterly to semi-annually. Media should be discarded and replaced with new media when the effluent no longer achieves the treatment goals.

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