

### Advanced Performance Media for Water Filtration

#### Catalytic Filtration Media for the removal of Iron, Manganese, Arsenic and Radium

FilterIN™ is a dark gray color filter media with a proven technology used for removing iron, manganese, arsenic and radium from groundwater and domestic drinking water supplies.

- The pure synthetic manganese dioxide coated surface of FilterIN™ acts as a catalyst in the oxidation reduction reaction of iron and manganese.
- The silica sand core of FilterIN™ allows it to withstand waters that are low in silica, TDS and hardness without breakdown.
- FilterIN™ protects and pre-treats all other water treatment systems from iron and manganese biofouling, effectively longer filter run times, and with the benefit of reduced oxidant demand.
- FilterIN™ is the lowest cost of whole life iron and manganese removal media.



### FilterIN™ Physical Characteristics

Particle size, Ø mm	<b>0.4 - 0.8</b>
Bulk density, g / cm <sup>3</sup>	<b>1.45</b>
Manganese dioxide content, % of total mass	<b>2-3</b>
Grindability, %	<b>&lt;2</b>
Abrasion, %	<b>&lt;0.2</b>
The limiting content of iron dissolved in water, at which a standard filter with FilterIN™ purifies water in a normalized flow to the maximum permissible concentration for iron (0.3 mg / l), mg / l	<b>25</b>
The limiting content of manganese dissolved in water, at which a standard filter with FilterIN™ purifies water in a normalized flow to the maximum permissible concentration for manganese (0.1 mg / l), mg / l	<b>2<sup>1</sup></b>
The pH range in which FilterIN™ works most effectively	<b>6.5 - 8.5</b>
Nominal temperature range of purified water, °C	<b>5 - 35</b>

<sup>1</sup> At higher concentrations of manganese dissolved in water, additional operations and reagents are required.

### FilterIN™ Description and Instructions

Specific activity of natural radionuclides	<b>&lt;370 Bq / kg</b>
Flow rate in operation	<b>5.0 - 12 m / h</b>
Backwash flow rate	<b>24 - 48 m / h</b>
Backfill height	<b>600 mm</b>
Minimum free space in the tank	<b>40%</b>
Expansion	<b>15 - 35%</b>

### Packaging (Paper bag with valve)

Volume	<b>14.2 l</b>
Weight	<b>20 kg</b>
Bags on a pallet	<b>48 pcs.</b>
Storage	<b>under the roof</b>
Storage time	<b>unlimited</b>

### Purpose

FilterIN™ is a filter media for filtering tanks of filter systems (plants, systems) for obtaining drinking water from sources containing dissolved iron and manganese compounds. Most often, such compounds contain well and spring waters. A characteristic feature of iron-containing water is yellow streaks. Dissolved manganese does not give noticeable traces, but it is more dangerous than iron, as it is a strong neurotoxin.

FilterIN™ provides effective catalytic purification of aerated waters of various composition from dissolved iron and manganese compounds (in a wide range of their concentrations). When aerated / ozonized water contacts the surface of its granules, dissolved impurities are oxidized, oxidation products fall out of solution and are deposited on the granules together with suspended particles and colloidal aggregates, which clarifies and deodorizes the water. (Residual ozone is completely decomposed on FilterIN™ granules). Additional operations (maintaining the pH of the water at a level of 7 - 8.5 and dosing of additional oxidants - sodium hypochlorite or potassium permanganate) allow using FilterIN™ for the purification of highly polluted waters.

### Appearance

Small homogeneous granules of irregular shape of dark gray color, odorless, consisting of inert crystals (98-96%), covered with a continuous strong shell of pure synthetic manganese dioxide (1-2%). It differs from other analogues in its beautiful metallic luster and coating durability (does not stain).

### Analogues

Such manganese dioxide catalysts ("catalytic loads" or "filter media") are widely used for water treatment all over the world. The most famous and demanded in the world market (GreenSand Plus, Aquamandix, BIRM, Pyrolox, Katalox, etc.) are produced in the USA and Western Europe. FilterIN™ is the only competitive domestic analogue of such catalysts. Its quality is not worse, but it is significantly cheaper and has longer operating time.