



FILTER MEDIA FeMAs



PRODUCT DESCRIPTION

FeMAs is a brown - black filter media used for removing soluble iron, manganese, hydrogen sulfide, arsenic and radium from groundwater supplies..

- Under the proper conditions, no chemicals to purchase for maintenance.
- Regenerant not required.
- Iron removal efficiency is extremely high.
- Negligible labor cost: only periodic backwashing required.
- Durable material with a long life and wide temperature range.

Identifiers:

1. CAS Number: 1313-13-9
2. ChemSpider: 14117
3. EC Number: 215-202-6
4. Jmol 3D model: Interactive image
5. PubChem: 14801
6. RTECS number: OP0350000

Properties/ Specification

Chemical formula: MnO_2

Molar mass: 86.9368 g/mol

Appearance: Brown-black solid

Bulk Density: 1500 – 1600 kg/m³

Melting point: 535 °C (995 °F; 808 K) (decomposes)

Solubility in water: insoluble

Thermochemistry

Std molarentropy (S°_{298}) : $53 \text{ J} \cdot \text{mol}^{-1} \cdot \text{K}^{-1}$ [1]

Std enthalpy offormation ($\Delta_f H^{\circ}_{298}$): $-520 \text{ kJ} \cdot \text{mol}^{-1}$ [1]

Hazards

Safety data sheet: ICSC 0175

EU classification(DSD): Harmful (**Xn**) Oxidizer (**O**)

R-phrases: R20/22

S-phrases: (S2), S25

NFPA 704:

Flash point: 535 °C (995 °F; 808 K)

OPERATING PERFORMANCE

FeMAs is a high rate, granular whole house water filter media used for removing Hydrogen Sulfide, Iron and Manganese compounds from water supplies. The media operates both as a classical filter working with an oxidant and as a catalytic media due to its ability to accelerate the reaction between the oxidizing agent and any prevalent dissolved Oxygen with Sulfide, Iron and Manganese present.

Dissolved iron, Manganese and Hydrogen Sulfide will stay in solution unless the equilibrium is changed. Iron and Manganese that is not oxidized become catalytically precipitated and then adsorbed directly on the media. The media is a very dense media that stops oxidized (precipitated) forms of Iron, Manganese and Hydrogen Sulfide from passing through the bed. Most of the Manganese is rapidly removed in the first few inches of the media where it is further oxidized to Manganese Dioxide. The adsorbed Manganese, Iron and precipitated Sulfur are expelled during backwash. Any insoluble ferric hydroxide particulate growths are also expelled during backwash.

The media must be properly backwashed to break loose and remove the filtered contaminants and precipitated Iron, Manganese and Hydrogen Sulfide. (Every day is typical). System sizing of the control valve and tank are necessary to sustain media performance. A continuous reaction occurs with the addition of an oxidant, regenerating the media surface and replenishing the media. For difficult applications, Manganese Dioxide filters can be enhanced with aeration, chlorination, and ozone. Manganese Dioxide filters are recommended before softeners to protect the ion exchange resin from fouling.

Advantages

- Efficient reduction of manganese, iron and hydrogen sulfide
- Long service life
- Only regular backwashing is necessary
- Ability to process high flow rates with low pressure drop
- Continuous regeneration

- Ability to be utilized with common oxidants including Chlorine, Sodium Hypochlorite & Potassium Permanganate
- 10 – 30 second reaction time with oxidant additive
- Converts Ferrous Iron to Ferric Iron ($\text{Fe}^{2+} \rightarrow \text{Fe}^{3+}$)
- Converts H_2S to Sulfur
- Converts Manganese to MnO_2
- No chemical regeneration is required but may reduce service life

Requirements

- Service flow rate : 6 GPM / cu ft.
- Backwash flow rate : 12 – 15 GPM per square feet of media
- Bed depth : 20" minimum
- Freeboard : 30% - 50%
- pH range : 6.0 – 9.0

Performance:

- Removal of Iron up to 27 ppm
- Removal of Manganese up to 11 ppm
- Removal of Hydrogen Sulfide (rotten egg smell) up to 17 ppm

Note:

Not recommended for Iron Bacteria and Manganese bacteria removal. Not recommended for tannin and organics.

ORP requirements

FeMAs acts as a catalyst to use the Oxygen content of the water for oxidation. Using an ORP Meter, any reading above a negative 170 millivolts indicates **FeMAs** can be used effectively without the use of additional oxidants. Any reading below indicates oxidants will be required.

Size

0.5 – 1.0 mm ; 1-2 mm; 2-4 mm

PACKING INFORMATION

Packing of the material is done as per customer's requirement. Presently we offer following range of packing:

1. In 25 Kgs/50 Kgs PP Bags palletized and Shrink Wrapped.
2. In 1250 Kgs/1000 Kgs Jumbo PP Bags palletized and Shrink Wrapped.

The pallet size used by us is 42 inch X 42 inch X 6 inch.

STORAGE

Requirements to be met by storerooms and receptacles: Protect from humidity and water