



M.dOX 80™ is a high rate, granular filter media used for removing hydrogen sulfide, iron and manganese compounds from water supplies. M.DOX 80 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. M.DOX 80 is a very dense media that stops oxidized (precipitated) forms of iron, manganese and hydrogen sulfide from passing through the bed. Most of the manganous 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 expelled during backwash. The media must be properly backwashed to break loose and remove the filtered contaminants and precipitated iron, manganese and hydrogen sulfide.

Proper 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 M.DOX 80. For difficult applications, M.DOX 80 filters can be enhanced with aeration, chlorination, or ozone. Because of M.DOX 80's naturally high manganese dioxide content, it provides a higher adsorption capacity than other media. A M.DOX 80 filter is 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 required
- Ability to process high flow rates with low pressure drop
- Continuous regeneration
- Ability to be utilized with common oxidants including:
 - CL2 (gas) - Sodium hypochlorite – Potassium Permanganate
- 10 – 30 second reaction time with oxidant additive
- Converts ferrous iron to ferric iron
- Converts H2S to sulfur
- Converts Manganese to MnO2
- No chemical regeneration is required but may reduce service life
- Allows for adequate reaction time to permit for the formation of ferric hydroxide
- Allows for physical straining of the ferric hydroxide floc and sulfur until media requires backwashing
- Allows for adsorption of MnO2
- NSF/ANSI Standard 61 - 2002 Certified

APPLICATIONS

- Removal of Iron up to 10 ppm
- Removal of Manganese up to 5 ppm
- Removal of Hydrogen Sulfide (rotten egg smell) up to 3 ppm
- Not recommended for Iron Bacteria and Manganese bacteria removal
- Not recommended for tannin and organics removal

PHYSICAL PROPERTIES

Color	Black
Purity	>85 %
C.A.S No.	1313-13-9

Physical Form
content
Bulk density

Granular	Moisture
<0.5%	125 lbs/ft ³

Mesh size (US-Unit) 8 x 20 / 20 x 40
Mesh size (mm) 0.85 – 2.36 / 0.425 – 0.85
Uniformity Coefficient 1.77

OPERATING CONDITIONS

PH 6 – 9
Bed depth 36 – 48 inches (900 – 1200 mm)
Service flow rate 5 – 10 gpm / sq ft. (12 – 20 m/h)
Back wash flow rate 22 - 30 gpm / Sq ft (50 - 72 m/h)
Back wash expansion 15 – 30%
Freeboard 70% of bed depth
Oxidant type Chlorine
Oxidant Form 12.5% Sodium Hypochlorite
Oxidant contact time 10 – 30 seconds
Typical oxidant dosage 0.5 – 2 ppm
Regeneration Continuous w / oxidant addition
Removal efficiency 95 – 99% for Iron - 99 % for Manganese
Back wash efficiency Every 24 hours [optimal]

SHIPPING INFORMATION

Packaging 25 kg bags OR 1 Metric Ton SuperSack
Bags per pallet (25 kg bags) 40
NFPA Rating Health: 2 - Flammability: 0 - Reactivity: 1

