

DATA SHEET

Application

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:
 - Cl_2 (gas) - Sodium hypochlorite – Potassium Permanganate;
- 10 – 30 second reaction time with oxidant additive;
- Converts ferrous iron to ferric iron;
- Converts H_2S to sulfur;
- Converts Manganese to MnO_2 ;
- 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 MnO_2 ;
- 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
Physical Form	Granular
CAS No	1313-13-9
Purity, %	>85
Moisture content	<0,5%
Bulk density, lbs/ft	125
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
Specific Gravity	3,8

Operating Conditions

pH		6 – 9
Bed depth, in (mm)		36 – 48, (900 – 1 200)
Service flow rate, gpm/sq ft, (m/h)		5 – 10, (12 – 20)
Back wash flow rate gpm /Sq ft (m/h)		22 – 30, (50 – 72)
Back wash expansion, %		15 – 30
Freeboard, % of bed depth		70
Oxidant type		Chlorine
Oxidant Form		12,5% Sodium Hypochlorite
Oxidant contact time, seconds		10 – 30
Typical oxidant dosage, ppm		0,5 – 2,0
Removal efficiency	for Iron	95 – 99%
	for Manganese	99 %
Back wash efficiency		Every 24 hours (optimal)

Shipping Information

Packaging	25 kg bag
	1 Metric Ton Super Sack
Bags per pallet	40 bags*25 kg bags

NPFA Rating Health: 2; Flammability: 0; Reactivity: 1.