

MDOX80 Pyrolusite



FILTRATION

M.dOX 80 PYROLUSITE

💧 **M.dOX 80 Pyrolusite** is used for the treatment of iron, manganese and hydrogen sulphide. This media produces an oxidation-reduction reaction and proves to be simultaneously a highly performing filtration media.

💧 **M.dOX 80 Pyrolusite** contains 80% manganese dioxide with a unique structure which allows it to strengthen its action and maximize its capacity.

💧 **M.dOX 80 Pyrolusite** performs better than any other media because of its pureness, its oxidation and filtration capacity and also its lifetime.

💧 **Comparative information :**

M.dOX 80 Pyrolusite contains 75 to 85% manganese dioxide, the Greensand contains only 0.5% manganese dioxide and the Birm 0.01%.

💧 **Implementation of Pyrolusite :**

Mix 30 to 40% Pyrolusite with sand grading from 0.7 to 1.25 mm.

M.dOX 80 Pyrolusite is NSF / ANSI 61-2010a certified for potable water applications.

In most cases, Pyrolusite does not require the addition of potassium permanganate, a mere oxidation with air or chlorine addition is enough, even in the presence of manganese.



- 💧 Colour : black
- 💧 Bulk density : 1860 g/l
- 💧 Granulometry : 0.8 to 2.4 mm
- 💧 Mn contents : > 85%
- 💧 Hardness : 3°-5° Mosh
- 💧 Bed depth : 800 to 1200 mm
- 💧 Available in 25 kg bags

APPLICATIONS

- Iron and manganese removal in feedwater.
- Hydrogen sulphide reduction.
- Drinking water.
- Industrial water.
- RO pretreatment or ion exchange resin pretreatment.

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TECHNICAL DATA

Determination of the total Fe equivalent (TFE) :

$$\text{TFE} = \text{Fe (ppm)} + 2 \text{ Mn (ppm)}$$

Filtration speed over TFE :

TFE ppm	Service Flow (speed) m/h
1,0	15
1,4	12
2,0	11
3,0	10
5,0	8
10,0	6

Minimum Backwash speed : 25 m/h

OPERATING PH

Pyrolusite is stable from pH 5.0 to pH 9.0. When pH is less than 6.5 or exceeds 8.5 an oxidant must be added.

When is it necessary to add an oxidant :

A simple redox measurement allows to know if the addition of an oxidant is necessary. If the redox is less than 170 mV, then add the equivalent of 0.2 ppm of chlorine per ppm of total Fe equivalent.

Particular case of organically complexed Iron :

Can be treated by adding systematically potassium permanganate.

Where it is necessary to add an oxidant :

Redox < 170mV

5,0 < pH < 6,5

8,5 < pH < 9,0

TFE > ou = 5

PYROLUSITE BENEFITS

- Stable from pH 5 to 9.
- Contains 80% manganese dioxide.
- A mere redox measurement lets you know if you need to add an oxidant.
- High filtration speed.
- Contact time reduced to a few seconds.
- Only 40 to 50% Pyrolusite mixed with sand.

It is always better, when it is possible, to install an oxidation ahead of Pyrolusite to ensure that the oxidation reduction reaction is complete and to preserve the media lifetime.

An air oxidation is simple and inexpensive, however the chlorine oxidation remains more effective and controls bacterial growth in the filter.

Possible oxidants :

- oxygen (air),
- chlorine,
- Dioxide of chlorine,
- Ozone
- potassium permanganate.

Hydrogen sulphide maximum concentration :

- 4 to 7 ppm.