

FILTRATION MEDIA



MTM® FILTRATION MEDIA (MANGANESE GREENSAND EQUIVALENT)

MTM® (P/N MTM) is a granular manganese dioxide filtering media used for reducing iron, manganese, and hydrogen sulfide from water. Its active surface coating oxidizes and precipitates soluble iron and manganese. Hydrogen sulfide is oxidized to a sulfur. The precipitates are filtered out in the granular bed and removed by backwashing.

MTM consists of a light weight granular core with a coating of manganese dioxide. The coating provides an example of contact filtration where the media itself provides the oxidizing potential. This allows for a much broader range of operation than many other iron removal medias. A pH level as low as 6.2 can be treated. Dissolved oxygen is not essential. The media's light weight reduces backwash water requirements.

FEATURES

- Broad operating range for iron reduction
- Lower pressure loss through the bed with high flock holding capacity
- Effective hydrogen sulfide, iron, and manganese reduction
- Light weight requires lower backwash rates and reduces pumping requirements
- Chlorine can be beneficial in extending filter run times
- Low attrition loss for long bed life
- Lower shipping cost
- Certified to NSF/ANSI Standard 61

Continuous Regeneration

Use Cl₂, KMnO₄ or both

Intermittent Regenerations

KMnO₄ Dosage 1.5 to 2.0 oz (by dry wt.) per cu.ft.

Regeneration Time 30 minutes minimum

Rinse until all traces of KMnO₄ are gone

This information has been gathered from standard materials and or test data that is believed to be accurate and reliable. Nothing herein shall be determined to be a warranty or representation expressed or implied with respect to the use of such information or the use of the goods described for any particular purpose alone or in combination with other goods or processes, or that their use does not conflict with existing patent rights. No license is granted to practice any patented invention. It is solely for your consideration, investigation and verification.

MTM® is a registered trademark of Clack Corporation.

Physical Properties

Color Dark brown

Bulk Density 45 to 50 lb per cu.ft.

Specific Gravity 2.0 gm/cc

Effective Size 0.43 mm

Uniformity Coefficient 2.0

Mesh Size 12 x 50

Conditions for Operation

pH 6.2 to 8.5

Maximum Temperature 100°F (38°C)

Bed Depth 24 to 36 inches

Freeboard 50% of bed depth minimum

Service Flow Rate

Continuous 2 to 5 gpm per sq.ft.

Intermittent up to 10 gpm per sq.ft.

Backwash Rate @ 60°F

Tanks ≤ 12 inch diameter 8 to 10 gpm per sq.ft.

Tanks ≥ 13 inch diameter 10 to 12 gpm per sq.ft.

Backwash Bed Expansion 20 to 40% of bed depth min.

Maximum Practical Limit

Iron 15 ppm

Manganese 5 ppm

Hydrogen Sulfide 2 ppm

Influent and Backwash Limitations

Oil None present

Polyphosphates None present

Air Scour Not allowed

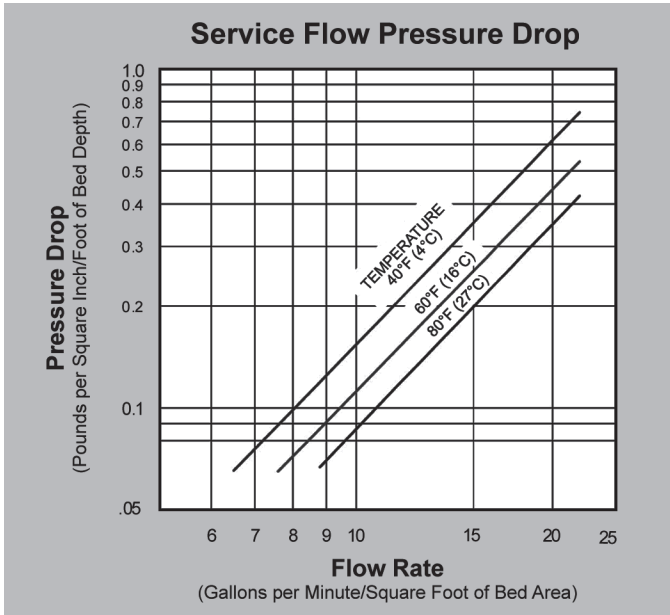
Packaging

1 cu.ft. bags (40 bags / pallet)

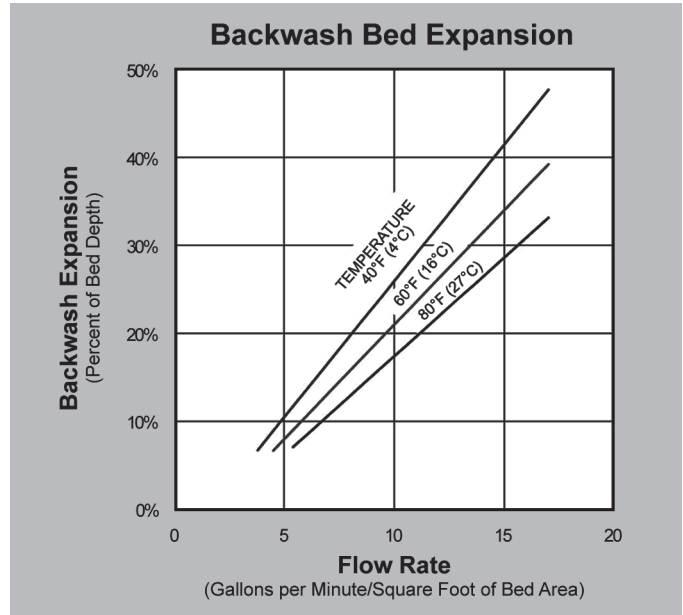
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PRESSURE DROP — The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate at various temperatures.



BACKWASH — After each cycle the media bed should be backwashed at a rate that expands the bed 20 to 40 percent.

NOTES ON USING MTM

When the oxidizing power of MTM is reduced, the bed has to be regenerated with a weak solution of potassium permanganate (KMnO_4), thus restoring its oxidizing capacity. A regenerating solution of 1½ to 2 ounces (dry weight) of potassium permanganate per cubic foot is sufficient for normal regeneration. Upon start-up a new bed should be backwashed and caution taken to insure that the lightweight media is not backwashed to drain. A new bed should be regenerated the evening of installation. **Operating the filter after its oxidizing capacity is exhausted will reduce its service life and may cause staining.**

MTM requires either intermittent or continuous regeneration to maintain its oxidizing capacity. A solution

of potassium permanganate (or chlorine then potassium permanganate) can be pre-fed to maintain capacity. In the latter case, the manganese dioxide coating acts as a catalyst to enhance the oxidation reaction and as a buffer to reduce any excess potassium permanganate concentration and prevent it from entering the service lines.

The addition of other chemicals to influent or backwash water which contacts MTM media may inhibit iron, manganese, or hydrogen sulfide removal, or may break down or coat MTM media. Before adding any chemical to the influent or backwash water, other than chlorine or potassium permanganate, the chemical's compatibility with MTM should be thoroughly tested.

CALIFORNIA PROPOSITION 65 WARNING: This product contains crystalline silica which is known to the State of California to cause cancer and other substances which are known to the State of California to cause cancer, birth defects and reproductive harm.