

MANGANESE DIOXIDE

Manganese Dioxide Filter Media

KT[®]

Manganese dioxide is a granular type of filter media used in a filter tank to remove iron, manganese, radium, arsenic, and hydrogen sulfide in the tap water. The black to brown-colored substance is a naturally-occurring mineral used in water treatment and other applications, including agricultural pesticides and fungicides, as well as in the production of batteries and beverage cans. The mineral pyrolusite is one of the more popular and commonly used filter media to remove iron and manganese in water supplies.



Manganese dioxide works as a catalyst to improve water quality by removing iron and manganese, and other contaminants in tap water from municipal water supplies and deep well. MnO₂ is responsible for the chemical reactions occurring inside the filter system to remove iron, manganese, radium, arsenic, and hydrogen sulfide from the water source. These contaminants precipitate and get absorbed onto the granular filter media containing manganese dioxide.

PHYSICAL PROPERTIES:

○	Color	Dark brown
○	Bulk Density	45-50 lbs./cu. ft.
○	Specific Gravity	2.0 gm/cc
○	Effective Size	0.43 mm
○	Uniformity Coefficient	2.0

CONDITIONS FOR OPERATION:

▶	Water pH range	6.2-8.5
▶	Maximum water temp	100°F/38°C
▶	Bed depth	24-36 in.
▶	Freeboard	50% of bed depth (min.)
▶	Service flow rate	2-5 gpm/sq. ft.
▶	Backwash flow rate	At 60°F 8-10 gpm/sq. ft.
▶	Backwash expansion rate	20-40% of bed depth (min.)

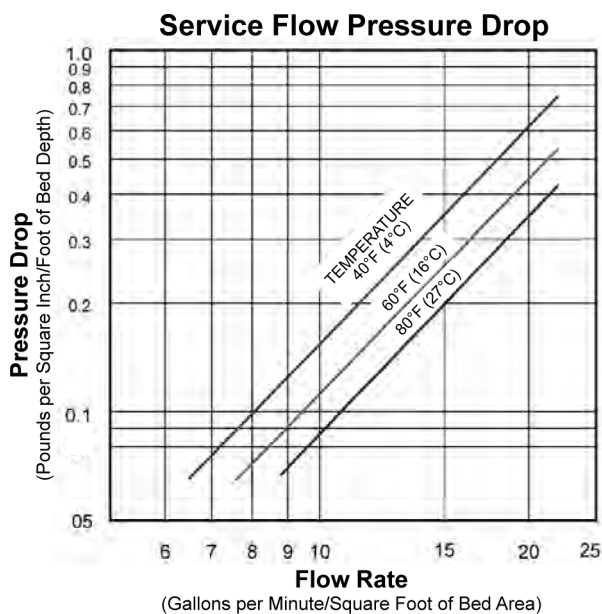
APPLICATIONS

- 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

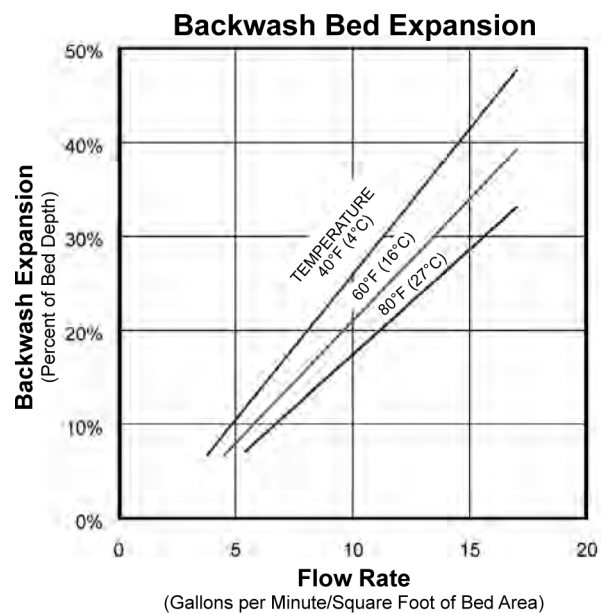
GRANULAR SIZE WITH MnO₂ Content Purity

Product Name	Size (MM)	Mno2 Content
Manganese Dioxide KT-40	0.5-1, 1-3, 3-5, 5-10, 10-20, 20-50	40-42%
Manganese Dioxide KT-60	0.5-1, 1-3, 3-5, 5-10, 10-20, 20-50	60-62%
Manganese Dioxide KT-70	0.5-1, 1-3, 3-5, 5-10, 10-20, 20-50	70-72%

MnO₂ Pressure Drop Graph



MnO₂ Backwash Expansion Graph



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