Manganese Greensand Filters

Unit flow rates from 35 to 400 gpm

Standard Features

Designed for heavy industrial applications
Pre-engineered and pre-assembled units
Manganese greensand (formulated glauconite)
Removal of iron, manganese, hydrogen sulfide
Steel pressure vessels at 100-psig rating
Tank exteriors sandblasted and epoxy coated
Tank interiors sandblasted and epoxy lined
Vessel access may include manhole in upper head
Structural steel legs for rigid and safe support
PVC internal distribution (hub-radial, header-lateral)
Schedule 80 PVC piping manifolds
Cast iron body butterfly valves with stainless steel discs, double acting pneumatic actuators
Inlet/outlet pressure gauges & sample valves
AB Micrologix PLC, Maple Systems operator Interface, flow indication, alarms
Nema 4 enclosure

FILTER SPECIFICATIONS

Model Number	Flow Rates in GPM		Pipe Size	Tank Size in inches	Media	Ship Weight
	Normal Service	Backwash @ 60° F	Inches	Diameter x SS	Cubic Feet	Approx. Lbs.
MGF-360	35	70	2	36 x 60	18	4000
MGF-420	47	95	3	42 x 60	24	5000
MGF-480	65	125	3	48 x 60	32	6500
MGF-540	80	160	3	54 x 60	40	8500
MGF-600	100	200	3	60 x 60	50	10500
MGF-660	120	235	3	66 X 60	60	12500
MGF-720	140	280	4	72 x 60	70	15000
MGF-840	190	380	4	84 x 60	95	20000
MGF-960	250	500	4	96 x 60	125	26000
MGF-1080	315	630	6	108 x 60	160	35000
MGF-1200	400	775	6	120 x 60	200	45000

Standard Options

Interconnecting piping for multiple units
ASME code pressure vessels
Skid mounting on structural steel open frame
Manual valves and manual operated backwash
Air scouring backwash system
Separate backwash inlet connection
3" X 12" sight glass window
Media trap
Nema 4X enclosure
Anthracite media can

Filter Performance

Manganese greensand iron filters have the unique ability to remove both soluble and insoluble iron from water. These filters are used when hardness is low or when removal by ion exchange is not practical. Under special conditions, this iron filter can also remove manganese and hydrogen sulfide.

Between a pH of 6.2 and 8.8 the manganese greensand filters can typically reduce iron and manganese, excluding colloidal or chelated forms, to a level of 2% of the influent amount or 0.1 ppm, Fe, whichever is greater.

Filter Loading

Mn and soluble Fe are oxidized and precipated by either a) contact with the higher oxides of Mn on the greensand granules or b) reaction with the oxiding chemicals added to the feed water.

All precipitates are then filtered and removed by backwashing. Loading is determined from the combined concentration of Fe + Mn in the feed water and the choice of regeneration method.

Custom Engineered Equipment

ISS can custom engineer and manufacture any size multimedia filter to meet the varied and specific requirements of industrial, municipal and agricultural applications.

Please call us if you need a customized filter design with a specific vessel size or material, interior lining, exterior coating, piping material, valve type, instrumentation package, vessel access, or system configuration.

Normal Filter Service

Feed Water ppm Fe+Mn	Flow Rate GPM/ft^2	Bed Depth Media inches
<2	5	30
2-5	4	30
5-8	3	36
8-12	2	42

Filter Regeneration

Regeneration is achieved in a continuous or an intermittent manner, depending upon feed water source and desired operation.

The continuous method involves feeding a predetermined amount of $KMnO_4$, usually in combination with Cl_2, directly to the raw feed water prior to the manganese greensand.

With the intermittent method the filter unit is backwashed at the end of a service cycle and regenerated, downflow, with a $KMnO_4$ solution. This restored the media's oxidative capacity.

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