OVERVIEW OF THE DIFFERENT MEDIA FOR IRON REMOVAL

1. CRYSTAL RIGHT

Crystal Right is an innovative product that removes iron, manganese and hardness in one sole manipulation. In contrary to other solutions for iron removal such as Birm or MTM, the elimination by Crystal Rigt is based on the process of ion exchange and not on pure filtration. Crystal Right treats non-oxidized iron and manganese, present in water originating from wells with a certain depth. Just as with standard softeners, a regeneration with brine (NaCl) takes place when the resins are exhausted. Opposite to standard softener resins, chlorine has no unfavourable impact on the performance of CR. We even advise the usage of chlorine during a regeneration in order to stop the proliferation of bacteria. As the needed flow during backwash is lower than during service, no specific measures are needed for the dimensioning of the pump.

Terms of use :

- Only to be used for the treatment of non-oxidized iron and manganese
- Maximal concentration of 15mg/l Fe.
- Minimal hardness of 5°fH
- CR100 : 5,7<pH<14
- CR200 : 7<pH<14
- CR only to be cleaned with CR Clear Out, classic resin cleaners cannot be used.

We advise to always perform a test With the « mini Crystal Right ».

2. BIRM

Birm is a filter product that removes iron and manganese. It also acts as a catalyst for the accceleration of the reaction of the dissolved oxygen and iron, present in the water. Birm promotes the oxidation of Fe^{2+} to Fe^{3+}. The so formed iron hydroxide can easily be filtered after precipitation. Birm has to be rinsed periodically by a simple backwash. No regeneration is needed, which represents an advantage compared to some other filtration media.

Terms of use :

- Maximal concentration 4mg/l Fe.
- To remove iron : 6,8<pH<8,5
- To remove manganese : 8,0<pH<9,5
- Average service flow: 10-15m/h (dependent on the quality of the water)
- Average backwash flow: 25m/h (important for the size of the pump)

We advise to always perform a test With the « Pallas Birm test filter ».

The « Birm Air Filter » iron removal products create an ‘‘air chamber’’ in the bottle. The air oxidizes and the birm filters the iron.

3. MTM

MTM, the successor of Manganese Greensand, removes by means of oxidation and filtration iron and manganese. The dissolved iron and manganese are oxidized when in contact with Greensand and precipitate. The particles are catched by the filter and rinsed by means of a backwash. When the capacity to oxidize of the MTM is exhausted, a regeneration is needed with a solution of permanganese ($KMnO_4$).

Terms of use :

- Maximal concentration 6mg/l Fe.
- 6,2<pH<8,8
- Regeneration with a solution of permanganese.
- Average service flow: 10-15m/h (dependent on the quality of the water)
- Average backwash flow: 25m/h (important for the size of the pump)

We advise to always perform a test with the « Pallas MTM test filter ».

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4. REMOVAL OF IRON BY MEANS OF SAND (OXIDATOR + SAND FILTER)

The classic process to remove iron. The dissolved iron and manganese is being oxidized in the oxidator during a period of 3 to 5 minutes. If applicable, dosing with sodium hypochlorite can be performed to treat complex iron and break the aromatic compounds. Before entering the filter, a purge is needed. The particles catched by the filter are rinsed by means of a backwash.

Terms of use :

- Maximal concentration 8mg/l Fe.
- Average service flow: 10-15m/h (dependent on the quality of the water)
- Average backwash flow: 25m/h (important for the size of the pump)