



**IRON REMOVAL HIGH PURITY - HIGH OXIDATION MEDIA
REMOVAL CAPACITIES*****

per cubic foot of filtration media
(1.4 cu ft 1054 tank, 2.2 cu ft 1354 tank)

Hydrogen sulfide: 10 mg/1;
Iron: 10 mg/1;
Manganese: 8 mg/1

***REMOVAL CAPACITIES BASED ON PROPER APPLICATION AND INSTALLATION, AND PRESSURE AND FLOW RATE CHARACTERISTICS - SEE ADDITIONAL INFORMATION

Caution:

Filters or media representing percentages of removal “up to” do not provide the minimum removal rate or the quantitative amount that can actually be removed. Up to” is just marketing that does not provide better consumer protection.

IRON REMOVAL HIGH PURITY- HIGH OXIDATION MEDIA

IRON REMOVAL HIGH PURITY- HIGH OXIDATION MEDIA is a high capacity filtration media for the removal of iron, manganese and hydrogen sulfide. Our media works on the principle of a catalyst reaction, but itself remains relatively unchanged. This reaction is accompanied with the formation of an intermediate compound or compounds, such as higher oxides of manganese, so that by the alternative composition and decomposition of them on the High Purity - High Oxidation Media is left unchanged. As a result, the iron, manganese and hydrogen sulfide are actually oxidized in the media and simple backwashing cleans the bed. No chemical regeneration is required, nothing is imparted into the drinking water and an essentially unlimited removal capacity for low containment concentrations.

**IRON REMOVAL HIGH PURITY- HIGH OXIDATION MEDIA
works equally well on three main classes of water.**

- 1) Those waters which begin to precipitate hydrogen sulfide, iron and manganese on exposure to air, usually hard water containing carbonates and/or sulfates.
- 2) Those waters which will hold hydrogen sulfide, iron and manganese in solution indefinitely, even when chlorinated and/or aerated. The elements usually combine with organic acids and appear in the colloidal form.
- 3) Those waters which contain hydrogen sulfide, iron and manganese, or all, in each of the above forms and therefore deposit a part, but not all, of the element after aeration, chlorination or ozone, and cannot be removed entirely by simple filtration. Our High Grade Iron Removal High Purity - High Oxidation Media has been proven to be an excellent complement to aeration, chlorination and/or ozone. Our High Grade Iron Removal High Purity - High Oxidation Media acts not only as a turbidity filter, but also as a polishing filter for any breakthrough of iron, manganese and hydrogen sulfide with the use of other pre-treatment methods.

For potential issues and solutions, please see following pages



**TECHNICAL SPECIFICATIONS AND DISCUSSION ON
POTENTIAL PROBLEMS AND THEIR SOLUTIONS.**

LOW pH: Iron Removal High Purity - High Oxidation Media will work extremely well between a pH range of 5.0 to 9.0. However, the higher the pH the higher the oxidation capabilities. A pH of 6.5 or higher is considered ideal. A pH lower than 6.5 may require extra media for contact time. Another approach may be a pH neutralizing filter prior to the Iron Removal System to increase the pH to 6.5 or greater, however this puts in jeopardy a sensitive unit and media. Please reference the information on the EWS pH balancing systems for correction of low pH problems.

OXYGEN: Iron Removal High Purity - High Oxidation Media is a high oxidation media that requires an average amount of dissolved oxygen in the water in order for it to function at its most basic removal capacities. The content of tannins, iron/manganese bacteria can reduce the dissolved oxygen in the water, making the need for chlorination even that much more important (see our chemical feed equipment). In the event of too much dissolved oxygen or gasses in the water, or a mechanical application that creates high concentrations, a burping (or carbonation) of the media can occur during backwash expelling media out the drain.

IRON AND/OR MANGANESE BACTERIA: The iron and/or manganese bacteria keeps the media from its oxidation capabilities. The ideal solution may be to super-chlorinate the well and piping system for 24 hours, then establish an on-going residual chlorination system of your choice to control the bacteria (see our chemical feed equipment). Once you have controlled the bacteria there will be no problem removing the hydrogen sulfide, iron and manganese with the Iron Removal High Purity - High Oxidation Media, otherwise unchecked this bacterial problem would foul the media and render it useless.

EXCESSIVE MANGANESE: While the Iron Removal High Purity - High Oxidation Media is effective on hydrogen sulfide, iron and manganese (see Removal Capacities), the reaction time on manganese is slower. Without the presence of other problems, this does not generally present a problem up to 8 parts per million. However, if levels are excessively high you may need to extend the dwell time over the media as long as there is also proper lift of the media for backwashing.

TANNINS: Tannins are not common. When present, tannins often have hydrogen sulfide, iron and/or manganese. To remove tannins, follow the steps as explained with iron/manganese bacteria problems with a holding tank for extended dwell time, then Iron Removal High Purity - High Oxidation Media to remove the hydrogen sulfide, iron and/or manganese and then the appropriate CWL/EWS System at that point of entry to remove the tannins and chlorine. Tannins will not hurt the any media, however see the above reference to "Oxygen" above.

HEME IRON - PINK IRON: Iron Removal High Purity - High Oxidation Media cannot completely remove organic complexes from biological degradation of vegetable and/or from bacterial metabolism. When well water is sporadically or totally untreatable by standard or simple methods and samples appear yellow or pink but have little or no settled iron oxide, one should suspect heme iron. Heme iron takes on many different forms depending on the organism available for it to complex with. This problem seems to be localized in certain areas in the United States. Heme iron stays in solution rather than settling out due to the iron complex and is unusable for oxidation.

In most cases Iron Removal High Purity - High Oxidation Media can remove all of the free iron and greater than 80% of heme iron. The resulting residual of heme iron can be run through a CWL or EWS System (check specifications). The carbon will absorb the remaining organic heme iron complex.



**Caution:
Please note the following;**

- Proper specifications of tank valve and media will be the key to your success with the proven High Grade Iron Removal High Purity - High Oxidation media. Proper sizing of the valve and backwash flow against the proper tank size and water service flow rate will result in satisfactory media performance. (Be sure the valve has adequate water supply for full backwash cycle.)
- If the media is not properly backwashed it will not lift the 20% necessary to break loose the contaminants of particulate hydrogen sulfide, iron and manganese. Without proper backwash (we recommend a daily backwash) you can quickly foul the bed and make the media useless. Therefore know your water problems and conditions, your PSI and GPM.
- The introduction of any organic link to iron (iron bacteria) or manganese creates a coating on any media or resin and will render the system useless. Chlorination or some form of effective treatment must be established at the origin of the water. In addition, the proper oxidation of the water is needed for the media to function properly.
- If the media is not properly backwashed it will not lift the 20% necessary to break loose the contaminants of particulate hydrogen sulfide, iron and manganese fouling and making the media useless. This requires a boosted water flow rate and/or water pressure to the system to function properly.

CAUTION

The proper use of these and any treatment system on a well and water that is not monitored, tested, or treated on a routine basis is dependent on several factors.

Know your water !!

**Know how your well,
the pump,
and how the delivery system works !!**