Iron and Manganese in Public Water Supplies (Waterworks)
Frequently Asked Questions

1. **What causes iron and manganese in drinking water?**

Iron and manganese are common substances in the environment. Both can cause problems in drinking water supplies. Rainwater dissolves iron and manganese as it goes through soil and underlying rock. The dissolved iron and manganese are then carried into groundwater that supplies wells. Dissolved iron and manganese can also be found in surface water reservoirs but are rare in running streams. Iron can also enter drinking water from corroding steel well casings and distribution system parts.

2. **What forms can iron take in drinking water?**

Iron that is dissolved in water is clear and colorless. Iron that is exposed to chlorine or air turns the water cloudy and starts to form a reddish-brown sediment. This can then settle inside a water heater or the pipes inside a home.

3. **What forms can manganese take in drinking water?**

Manganese that is dissolved in water is clear and colorless. Manganese that is exposed to chlorine or air turns water cloudy and can form a brown to black sediment. This sediment can then settle inside a water heater or the pipes inside a home.

4. **Is iron in my water a health concern?**

Iron is very important for good health. A normal level of iron in drinking water is not usually a health problem. Most tap water provides about 5% of the dietary need for iron. Iron is considered a secondary contaminant because it affects the look and taste of drinking water.

5. **Is manganese in my water a health concern?**

The amount of manganese in water is normally safe. Manganese is necessary for good health, immune system function, digestion, and bone strength. Extra manganese may be a health concern, especially for infants and young children. Adults and children get enough manganese through their diet. Infants get enough manganese from breast milk, food, or formula.

6. **Are iron and manganese regulated in drinking water?**

EPA decided to set voluntary standards because iron and manganese usually only affect the color and taste of water. In certain situations, the Virginia Department of Health may be able to get the waterworks owner fix high levels of iron and manganese. You can contact the Virginia Department of Health, Office of Drinking Water field office for more information.

7. **Are waterworks required to check their water for iron and manganese?**

Yes, the Virginia Department of Health requires most waterworks to test their water for iron and manganese at least every 3 years. You can ask your waterworks or visit the Drinking Water Viewer website to find out their test results.

8. What is the impact of iron on taste and food?

Water with iron in it has a disagreeable, metallic taste. Tea, coffee, and other drinks made with water that has iron in it are darker in color and have an unpleasant taste. Vegetables cooked in water containing iron can turn dark and look bad.

9. What is the impact of manganese on water taste and appearance?

Dissolved manganese gives water a metallic taste and can turn it a brown or black color.

10. Will iron in my tap water cause stains?

Yes, iron in water will leave reddish brown stains on sinks, bathtubs, dishes, and laundry that are very hard to remove. When iron deposits break loose from water pipes, rusty water will flow through the faucet.

11. Will manganese in my tap water cause stains?

Yes, manganese in water will leave brownish or black stains on sinks, bathtubs, dishes, and laundry that are very hard to remove. Adding bleach to laundry will cause stains.

12. What should I do when I see brown or discolored tap water?

While iron won't hurt you, you should not drink obviously discolored water. Brown or discolored water may be caused by plumbing problems inside buildings and from rusting water heaters. If you have an ongoing problem with brown water, it may be due to rusty pipes. If you have not used your water for a long period of time, you should run your cold water for 2–3 minutes to flush the pipes in your house.

13. What can cause brown or discolored water in the bathtub?

Sediment can collect in a water heater and get released when putting hot water in the bathtub. The water heater should be cleaned periodically to remove the sediment. You should ask a plumber before attempting this.

14. What else can cause brown or discolored water?

Several things can cause your water to suddenly look discolored. A break or repair in a water main or construction near your building can cause this. Also, the use of fire hydrants for firefighting can temporarily cause brown water. Any sudden change in the flow of water within the pipes or outside vibration may release the brownish/red/orange iron particles lying in the water pipes into the water. This temporary problem is generally fixed or reduced when waterworks staff flush water from nearby hydrants.

15. Who should I report brown or discolored water to?

If your water is brown or discolored, tell your water company so that they can see if they can fix it. If the company is not helpful, contact the Virginia Department of Health, Office of Drinking Water field office for help.

16. What can be done if water is brown or discolored?

A water company usually fixes brown or discolored water by flushing their water lines. If flushing does not work, a water company may need to use special treatment to get the water clear. If the company does not help, contact the Virginia Department of Health, Office of Drinking Water field office.

17. How can I test my tap water for iron or manganese?

You can use the services of a laboratory certified to test drinking water for iron and manganese. A list of certified laboratories is found here.

18. What about treatment in the home?

You can install a treatment system that filters all the water coming into the home or just specific faucets, such as a kitchen sink. Some types of filters can be attached to a faucet by someone living in the home. The installation of other types of filters are more complicated, and you should consult a plumber. The type of filter that you decide to install is usually based on the severity of the problem and the cost of installation and maintenance.

If the water is clear, a water softener can be used to remove small amounts of dissolved iron or dissolved manganese. An iron filter can be used if iron or manganese amounts are higher. A water softener is the more common method.

If the water is red in color, you can use an iron filter (such as a manganese greensand filter) to treat the water. A sediment filter, carbon filter, or water softener can remove small amounts of iron, but the red water will quickly clog the filter.

19. How do I know my water is still safe to drink?

Contact your water company if you have questions about your water. If the company does not help, contact the Virginia Department of Health, Office of Drinking Water field office.

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