

## Copper Fact Sheet

see other side for Lead Fact Sheet

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### Copper

Copper is a reddish-brown metallic element. It is commonly used in brass, coins, pipes, and electrical wiring. Copper is considered an essential nutrient in the human diet. Copper is rarely found in high concentrations in ground water but can find its way into drinking water through corrosion of pipes. The degree to which copper plumbing will corrode and introduce copper into drinking water depends on the corrosivity of the water. Corrosive water generally has a low pH but other factors such as temperature and conductivity also play in.



### Copper in Drinking Water

Copper is generally detectable by metallic taste at concentrations of 1 to 2 mg/L and levels of 5 to 8 mg/L make water undrinkable. Copper can also cause blue-green staining on sinks and fixtures. If a water supply is corrosive, new copper piping is likely to corrode and leach copper into the water. Under these corrosive conditions the copper concentration increases as the water sits in contact with the pipes. This means that the first draw from the tap after water has been sitting in the pipes has a higher copper concentration than water that simply moves quickly through the pipe system. For this reason, if you suspect corrosion of copper plumbing, it is a good idea to have a water sample tested that is taken immediately after turning the tap on after leaving the tap off for 12 hours.



### Health Effects from Copper

The Environmental Protection Agency has set 1.3 mg/L as a drinking water standard for copper. This standard only regulates public water systems by is useful as a guideline for private well owners. High concentrations of copper can cause vomiting, diarrhea, stomach cramps and nausea. Copper has also been shown to cause liver and kidney damage. Children under one year of age and people with Wilson's disease are particularly vulnerable to the toxic effects of copper.

### Treating for Copper

Hot water will leach more copper from plumbing than cold water, avoid using water from the hot water tap for cooking or drinking. Flush the cold water line by running a few minutes of water before collecting drinking water. You can use cold water to rinse dishes or water plants and then fill jugs for drinking water that can be stored in the fridge.

Alternative choices include replacement of copper plumbing with PVC or CPVC; water treatment with a neutralizing tank filter or caustic liquid treatment to reduce corrosivity of water; or removal of copper by installing an adsorption (i.e. carbon or charcoal), reverse osmosis, or distillation system at the drinking water tap.

### Additional Resources:

#### **Copper Information Sheet; Water Systems Council**

<http://www.watersystemscouncil.org/wellcare/infosheets.cfm>

#### **EPA Maximum Contaminant Levels and Fact Sheets**

<http://www.epa.gov/safewater/mcl.html>

#### **NSF International Home Water Treatment Devices**

[http://www.nsf.org/consumer/drinking\\_water/dw\\_treatment.asp?program=WaterTre](http://www.nsf.org/consumer/drinking_water/dw_treatment.asp?program=WaterTre)