



Water Treatment Division 336-727-8000 [cityofws.org/utilities](http://cityofws.org/utilities)

## What are the white particles clogging my recirculating hot water system?

If you have a recirculating hot water heater and are experiencing a reduction in the flow of your hot water, it may indicate clogging of the water heating equipment by zinc oxide sediment (a white powdery or crystalline buildup). This blockage is likely due to a natural corrosion process called dezincification.

### **What is dezincification?**

Dezincification is an electrochemical process and type of metal corrosion in which zinc, a component of brass, is released from brass. When zinc is released from brass, it is often in the form of zinc oxide, which may be visible as a white sediment.

### **Does dezincification make drinking water unsafe?**

No, zinc does not present a health risk.

### **How can dezincification affect plumbing?**

When zinc oxide is released from brass fittings, the zinc oxide sediment may slow or block the flow of water at the fitting. The loss of zinc may also weaken the brass fitting or result in leaks.

### **What can I do about it?**

We recommend getting advice from a licensed plumber. Under national code, brass fittings are required to have a low level of zinc to limit dezincification. Fittings made with dezincification resistant (DZR) brass contain less than 15 percent zinc and may be suitable as a replacement.

Additionally, the direct connection of dissimilar metals such as brass and steel *or* brass and copper, can result in galvanic corrosion. Galvanic corrosion occurs when two dissimilar metals are in contact with one another in the presence of an electrolyte like water. Water creates an electronic pathway for the movement of electrons and this may accelerate dezincification. Plumbers use fittings called dielectric unions to separate dissimilar metals and minimize the potential for galvanic corrosion.

**Questions?** Please call City Link 311 or 336-727-8000.