

Tel: 260-248-5119

Copper Reduction:

- When replacing water line and water fittings install PVC in place of copper.
- Any scrap material that contain or could contain copper alloys should be taken to the proper recycling facility.
- Read chemical labels and use copper free products when possible.

Columbia City WPCF

*Copper Reduction
Plan*



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Keep our receiving
waters clean.

Columbia City WPCF

Copper

What Is Copper?

Copper is a reddish metal that occurs naturally in rock, soil, water, sediment, and air. Its unique chemical and physical properties have made it one of the most commercially important metals. Since copper is easily shaped or molded, it is commonly used to make pennies, electrical wiring, and water pipes. Copper compounds are also used as an agricultural pesticide and to control algae in lakes and reservoirs.

Copper also occurs naturally in plants and animals. It is an essential element for all known living organisms, including humans. However, very large single or long-term intakes of copper may harm your health.

How can I be exposed to copper?

Copper and its compounds are common in the environment. You may be exposed to copper by breathing air, eating food, or drinking water containing copper. You may also be exposed by skin contact with soil, water, or other copper-containing substances.

Copper forms different compounds when it joins with one or more other chemicals. These may be naturally-occurring or manmade. Most copper compounds found in air, soil, and water are strongly attached to dust, or embedded in minerals, and cannot easily enter the body. These forms are not likely to affect your health. Other forms become dissolved in water and are not attached to other particles. In this form, copper is more likely to affect your health.

Uses for Copper:

- **Electrical:** Conductors, power cables, commercial and residential building wiring, generators, motor transformers and renewable energy production systems.
- **Information and communications technologies:** High-speed data transmission systems (including internet), mobile phones, personal computers, microprocessors.
- **Construction:** Plumbing, taps, valves, fittings, build facades, canopies, doors, window frames, sprinkler systems, roofing.
- **Transportation:** Copper-nickel alloys on hulls of boats and ships to reduce bio-fouling, automotive motors, wiring, radiators, connectors, brakes and bearings, trains and airplanes.
- **Agriculture:** Treatment for plant diseases like mildew, water, and additives in livestock and crop feed.
- **Fabrication:** Industrial machinery and general products such as coins and as preservatives for wood, leather, and fabrics.

Human Health Concerns:

High levels of copper can irritate the nose and throat, cause nausea, vomiting, and diarrhea. Very high or excessive doses of copper over a long period of time can cause damage to the liver and kidneys and even death. Copper is “not classifiable” as to human carcinogenicity, but is associated with birth defects or other developmental effects in humans.

Copper Concerns in Wastewater:

- High levels of copper in wastewater contributes to reduced treatment of effluent water leaving the plant and entering local receiving streams.
- Untreated copper enters the wastewater plants sludge, preventing the necessary levels required for a *Class A* sludge which is land applied as agricultural fertilizer.
- Concentrated levels of copper in influent water can put wastewater staff at risk when in contact with it.
- By reducing the levels of heavy metals such as copper that enter the waste stream, the wastewater facility is better able to meet the compliance standards set forth by the Indiana Department of Environmental Management (IDEM).

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