



FACT SHEET

California Environmental Protection Agency



Air Resources Board

COPPER

What Is Copper?

Copper is a versatile and commonly used metal that is found in both manmade and natural surroundings. Considered the world's oldest metal, historically copper was primarily used for coins and ornaments. Its ability to be easily molded and shaped, as well as its high corrosion resistance, and heat and electrical conductivity have made copper one of the most frequently utilized metals. It is also necessary to the human body to maintain good health. Copper is an essential element for a human being's metabolism.

What Are The Sources of Copper Emissions?

Copper and its compounds are used in electrical switches, electrical wiring, plumbing pipes, electroplating and thermal spraying, and roofing and building construction. Copper is also used in carbides and high-speed steels. Copper compounds are used as an antifoulant in paints for use on marine vessels and as a fungicide for fruits and vegetables for prevention of bacterial diseases.

Is Copper A Toxic Air Contaminant?

No. Copper is not a toxic air contaminant. It has been determined that exposure to copper fumes and dust emissions can initiate one or more adverse health effects. Potential paths of exposure to copper and its compounds fumes or dust are through inhalation, ingestion and dermal contact. The main forms of copper and its compounds fumes or dust are: metallic copper, copper oxide, and copper sulfate.

What Are The Possible Health Effects From Exposure To Copper?

At present, copper is not considered a human carcinogen. While copper is considered an essential element for the human body, exposure to large doses of copper fumes and/or dust can cause serious health effects. Exposure to large doses of copper and its compounds through inhalation, ingestion and dermal contact can cause:

- *Inhalation: Upper respiratory irritation, nasal and pharyngeal congestion. A condition known as "metal fume fever" causes flu-like symptoms, such as: headaches, chills, fever and muscle aches.*
- *Ingestion: Gastric pain and nausea. In severe cases, kidney damage and anemia.*
- *Dermal: Skin irritation and eczema.*

What Is ARB Doing About Copper Emissions?

Ambient levels of copper and its compounds are regularly monitored by the ARB air toxics network. The air monitoring data are used to develop guidelines for reducing air pollution impacts at the neighborhood scale (for additional information on this program, please see our website at <http://www.arb.ca.gov/ch/ch.htm>.)

ARB adopted an airborne toxic control measure for non-ferrous metal melting operations, which is expected to reduce emissions of copper from this process by 99%.

For additional information regarding toxic air contaminants and ARB's ongoing efforts and activities, please visit our website at <http://www.arb.ca.gov/homepage.htm> .