

Copper

Copper is a metal with very useful properties, such as excellent thermal and electrical conductivity, malleability and resistance to corrosion, and it even kills microbes when in an alloy, such as brass. This makes it the most common material used in electrical wiring, and an important component in pipes and roofs, and on touch surfaces in hospitals.



Copper tubes. Sources: copper.org



Copper wires Source: www.britannica.com/science/copper

EV motor contains a copper coil, and copper cables connect the battery and electronics.

In nature, copper is usually found with sulfur, in minerals such as chalcopyrite. It also occurs as native copper, and in minerals that result from the alteration of copper sulfide deposits, such as the spectacular green malachite, and sparkling blue azurite. The largest copper mines are found in Chile, which supplies about a quarter of the world's production of 20 million metric tonnes. In contrast, Canada mines about 0.5 million metric tonnes annually, most of which come from British Columbia and Ontario.

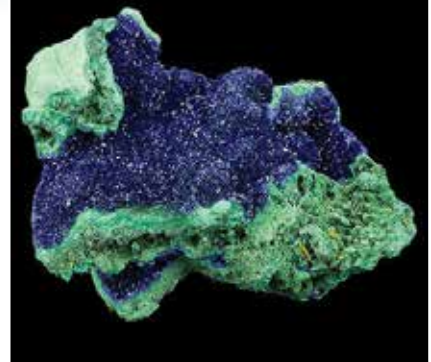
There are deposits of copper in Saskatchewan, all of which are found in the Precambrian Shield in the north of the province. They occur in massive sulfides in altered metavolcanic rocks, such as those in the Flin Flon and Creighton area, or as scattered sulfides in metamorphosed sedimentary rock the Wollaston Belt, north of La Ronge.

Copper is one of the 31 critical materials identified by the Canadian government in 2021, all of which are important for Canada's economic security, as a sustainable source for

Chalcopyrite from 777 mine, Flin Flon



Malachite and azurite:
Source: crystal-information.com



international partners, or required for the country's transition to a low-carbon economy. The latter is particularly significant as the world increasingly electrifies to reduce carbon emissions and dependence on fossil fuels and increases the use of renewable energy. As copper is the "metal of electrification", some forecasts predict that 50 million metric tonnes of copper will be needed by 2035, to connect to new solar panels, wind turbines, and storage batteries. Also, although an internal combustion engine car contains up to 20 kg of copper, a battery electric vehicle can require up to 80 kg. To meet this demand for copper, new mines will have to be discovered, in spite of copper being a metal that can be recycled without any loss of quality. **Copper is the new "gold"!** 