

## Copper Properties, facts, uses and production

#### What is copper?

Copper is essential to life and our modern society. Evidence suggests that copper was one of the first metals used by humans. Copper is an excellent conductor of electricity which is why it is used in a broad range of everyday household products and is essential to helping develop nations. It's also corrosion resistant and antimicrobial, meaning it prevents the growth of bacteria.

#### Facts about copper

The average Australian home contains 90kg of copper – in the wiring, pipes and appliances.



Construction, both residential and industrial.

Where is copper used?



Almost all copper products can be recycled – it is one of the most recycled metals in the world.



Infrastructure like power grids and traffic lights.



Copper occurs naturally in human, animals and plants. It is a vital nutrient to maintaining good health.



Transportation, including cars, aircraft and trains.



Copper can be mixed with other metals like zinc, aluminium and tin to form alloys.



Household consumer products like air conditioners, refrigerators, TVs and microwaves.



Electric vehicles use four times as much copper as petrol-based cars.



Smartphones, which typically contain 15-20g of copper.



Power sector for use in distribution lines, generators and transformers.



## What is the future for copper?

# **1.7mt**

In 2020, we produced 1.7 million tonnes of copper. This is enough to make over 420,000 wind turbines.



+50yrs

We are expanding our mine at Spence, extending its life for another 50 years.



+1.7mt

By 2027, copper demand stemming from electric vehicles is expected to increase by 1.7 million tonnes.



We are looking for more copper from all over the world. We recently discovered Oak Dam, 65kms from Olympic Dam, in South Australia.





# Copper Properties, facts, uses and production

#### Ways to mine copper

In Chile because the copper is relatively close to the surface we have an open-cut mine. In South Australia we mine underground because of the location of the Olympic Dam ore-body.

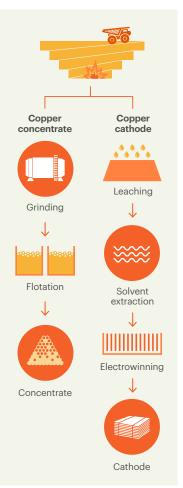
#### How we mine at Escondida

The ore is blasted and removed using a truck and shovel.

Then we use a grinding and flotation process to make copper concentrate.

Alternatively, we can use a process of leaching, solvent extraction and electrowinning to make copper cathode.

Copper cathode is used to produce copper wire and alloys.



# Why does BHP mine copper?

We believe that demand for copper will grow due to grade declines at existing copper mines, the radical urbanisation of large populations in China and India and the electrification of energy and transportation. The rise of renewable energy sources such as wind and solar require copper for their infrastructure.

# How we mine at Olympic Dam

Once the rock has been excavated underground, an automated train system hauls the ore to production facilities.

The ore is then crushed, stored and hoisted or trucked to the surface.

We then make copper concentrate from the raw material via a grinding and flotation process.

After smelting and refining, we process the leftover material to recover any gold and silver.



# Where is copper found?

Copper can be found all over the world.

BHP owns and operates several copper mines in Chile and one in South Australia.



