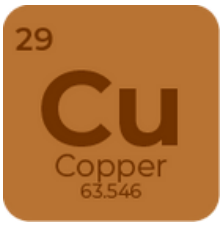
Common Technology Metals and Minerals

Metals and Minerals

Let's find out more about some of the metals and minerals that make our electronic world more exciting.



Copper (Cu): The Dependable Conductor
Copper is the ultimate balance of price and conductivity and is one of the most abundant metals used in electronic devices. Copper has great electrical conductivity and is responsible for connecting not only all the power points in your house but also makes up a lot of the wiring in your favourite electronic devices.

Gold (Au): The Trustworthy Connector
Gold is malleable, rare and expensive but is also highly conductive, meaning electricity can easily flow through it with minimal resistance. It offers a superior level of electrical conductivity. Unlike silver and copper, this precious metal is resistant to tarnishing. Gold doesn't mix well with oxygen. Even when left outdoors for long periods of time, it will absorb little or no oxygen. This is important because oxygen is responsible for tarnishing (as well as rusting). When oxygen mixes with a metal, it causes the metal to oxidize, which then leads to tarnishing or other forms of corrosion.

Silver (Ag): The Superior Conductor
Silver is the superior cousin to copper, but as the conductivity of silver increases, so does its cost. Its ability to allow electrical current to flow with minimal resistance makes it very useful to manufacturing high-end electronics. Silver is used in switches, connectors and contacts within devices; you may not be able to see the silver, but it's there and is helping in the transmission of electrons.

Lithium (Li): Powering our future
Lithium has emerged as a critical metal for battery technology which will enables the storing of energy produced from renewable resources to use when the sun doesn't shine, or wind doesn't blow. The lightweight nature of lithium makes it perfect for lithium-ion batteries to power the electronic devices we all use so much such as smartphones, laptops, tablets to name a few.

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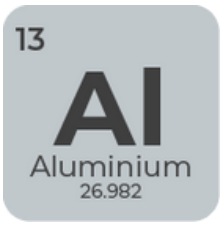
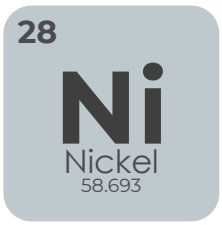


Aluminium (Al): Light and Cooling
Although sometimes aluminium can be used to transport electrical current, it's most widely used in electronic devices as a heat sink. Aluminium is excellent at dissipating heat that can build up from even the most effective conductors such as copper. As electricity flows through the conductor electrons bump against the atoms causing friction. Aluminium allows this heat to be released without damaging the electronic device.

Cobalt (Co): The Hidden Power Behind Your Tech
Cobalt is a shiny, silver-grey metal that's essential in powering our modern world. It's a key ingredient in lithium-ion batteries, which are used in electric vehicles (EVs), smartphones, and laptops. Cobalt is also used in making strong alloys for jet engines and turbines, as well as in creating vivid blue pigments for glass and ceramics. In Australia, cobalt is mainly found as a byproduct of nickel and copper mining, with significant reserves in Queensland and Western Australia. As the demand for clean energy and technology grows, cobalt plays a crucial role in supporting a more sustainable future.



Nickel (Ni): The Metal That Makes Things Last
Nickel is a strong, silver-white metal that's essential in many everyday items. It's a key component in stainless steel, making it resistant to rust and corrosion - think kitchen sinks, cutlery, and even skyscrapers. Nickel is also vital in batteries for electric vehicles and electronics, helping store and deliver energy efficiently. In Australia, most nickel is mined in Western Australia. As the world moves towards cleaner energy and technology, nickel's role continues to grow.

Silicon (Si): From Sand to Smart Tech
Silicon is a shiny, hard element found in sand and rocks that powers the digital world. It's the key ingredient in computer chips, solar panels, and many electronic devices. Silicon helps turn sunlight into electricity and lets your phone and computer run fast and smooth. Australia has plenty of silica-rich sand, making it an important part of the technology supply chain.

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Magnesium (Mg): Light Metal, Heavy Impact
Magnesium is a lightweight, silver-white metal that's essential in both industry and biology. It's the lightest structural metal, making it ideal for use in cars, airplanes, and electronics where reducing weight is crucial. Magnesium is also vital for human health, supporting over 300 bodily functions, including muscle movement, nerve function, and bone strength. In nature, magnesium doesn't occur in its pure form but is found in minerals like magnesite and dolomite. Its versatility makes it a key player in everything from construction materials to fireworks and even the chlorophyll in plants.

Met Coal

Coal That Builds: The Hidden Hero in Steelmaking
Metallurgical (Met) coal, also called coking coal, is a special type of coal used to make steel. Unlike thermal coal, which is burned for energy, metallurgical coal is heated in a process called “coking” to produce coke - a key material needed to turn iron ore into strong, durable steel. That steel is then used to build everything from bridges and buildings, to cars and wind turbines. Australia is one of the world’s top producers of high-quality metallurgical coal, especially from Queensland.

Bauxite

Bauxite: The Rock Behind Aluminium
Bauxite is a reddish-brown rock that's the main source of aluminium. It's formed in tropical regions when aluminium-rich rocks break down over time. In Australia, bauxite is mainly found in Queensland and Western Australia, with major mining sites at Weipa and the Darling Range. Australia is one of the world's top producers of bauxite, supplying both local industries and international markets. After mining, bauxite is processed into alumina, which is then used to make aluminium for products like cans, cars, and electronics.

Rare Earths

Rare Earths: The Secret Ingredients of Your Tech
Rare earth elements are a group of 17 metals that are super important for making modern technology work. They help power things like smartphones, electric cars, wind turbines, and even lasers. Despite their name, rare earths aren’t actually rare - they’re found all over the world but can be tricky to mine and process. In Australia, rare earth minerals are mined mainly in Western Australia, helping supply the clean energy technologies of the future.