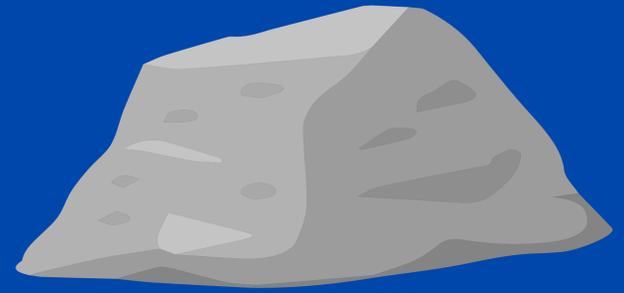


COBALT

Beautiful and critical by-product of nickel, silver, copper, and iron



COBALT

Co

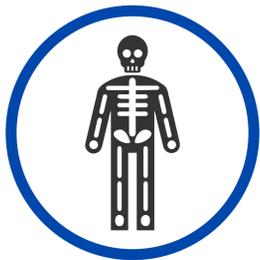
27 58.933

Scientific Properties

- Conducts heat
- Conducts electricity
- Malleable
- Ductile
- Can be magnetized
- Corrosion-resistant

Uses for Cobalt in the U.S.

MEDICAL



Cobalt is a trace element in vitamin B12 (aka cobalamin) essential to nutrition in animals like cattle and sheep, as well as in the maturation of human red blood cells. Cobalt alloys are also used with titanium and stainless steel in orthopedic implants. Cobalt-60 synthetic radioactive form (Co-60) is used to treat some forms of cancer and sterilize medical supplies.

BATTERIES



The top use for cobalt is in lithium-ion battery production. It provides stability to the cathodes of lithium-ion batteries used in hybrid cars and solar energy storage. Even green tech generates waste, and with fewer than 5% of lithium-ion batteries being recycled worldwide in 2019, we can all reduce e-waste by doing better at recycling the cobalt already mined.

INDUSTRY



Cobalt is used in superalloys for turbine engine parts. It is also used in electroplating, which strengthens and reduces corrosion to other metals while giving them a brighter surface. Cobalt is used to make airbags and steel-belted radial tires for cars, cutting tools, and magnetic recording media, and it's a catalyst for petroleum and chemical processes. Gamma radiation from Co-60 is also used as an X-ray alternative for inspecting industrial materials and structures.

MAGNETS



Alnico alloy (aluminum, nickel, and cobalt) is highly magnetic. This combination makes powerful magnets found in compasses, microphones, hearing aids, and wind turbine generators.

ART MATERIALS



Cobalt is used in drying agents for paints, varnishes, and inks. Cobalt salts are used to produce vivid shades of blue dyes and pigments in porcelain, glass, pottery, and tile.

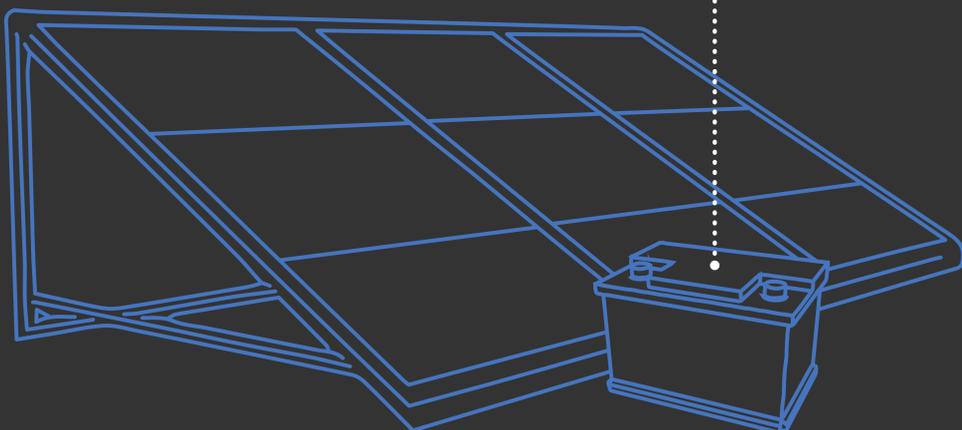


Even green tech generates waste

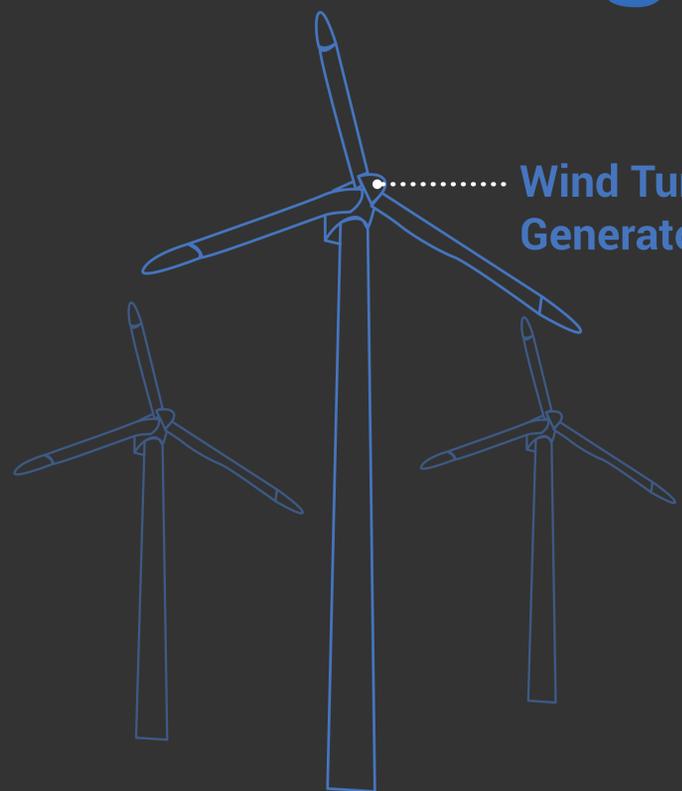
Considering that fewer than 5% of lithium-ion batteries were recycled worldwide in 2019, we can all do better at recycling the cobalt already mined and reduce e-waste.

Cobalt in Renewable Energy

Solar Battery Storage



Wind Turbine Generators



For more information, visit <https://www.blm.gov/alaska/minerals>

References:
<https://www.usgs.gov>
<http://www.sciencing.com>
<https://www.cobaltinstitute.org>
<https://www.inl.gov>