ALKANE RESOURCES LTD

Mining the metals of the future

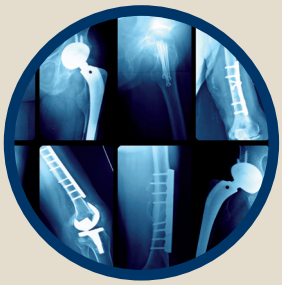
Zirconium based products replace harmful chemicals and improve our lives

Healthier bodies

Non-toxic and longer lasting materials

False teeth and fillings

Zirconia replaces heavy metals for brighter, whiter and more hard wearing teeth.



Replacement joints

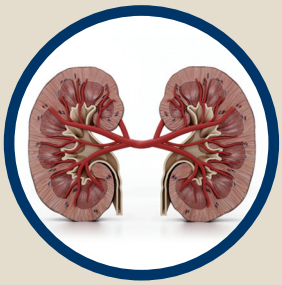
Zirconium alloys are used to make biocompatible, long lasting, hard wearing joints such as new ceramic knee and hip implants.

Products we rely on every day

Zirconium chemicals are used in numerous applications including scratch proof coatings for glasses, antiperspirants, high-tech coatings on jet engines and 3D printing ink

Mobile phones and phone towers

Zirconium RF amplifiers are used to boost mobile signal strength and clarity.



Kidney dialysis

Zirconium chemicals are used to remove ammonia from kidney dialysis machines.

Paint

Zirconium chemicals replace lead as the drying agent in paints.

Water repellent fabrics

Zirconium based wax technology is used in outdoor clothing, tents and tarpaulins.

Jet engines

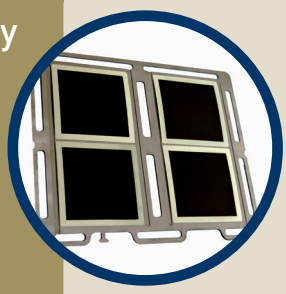
Zirconia ceramics provide diamond-like coating protection for jet turbines, allowing them to run hotter and cleaner.

Fire retardant fabrics

Zirconium based chemicals are used in wool and fabric dyes to increase fire retardation of fabrics.

Clean energy & lower emissions

Zirconium materials reducing our environmental impact



Fuel cells

The next generation of power are solid oxide fuel cells, providing clean, reliable and affordable portable power.

Catalytic converters

Catalytic converters in the exhausts of all modern cars contain approx 0.5kg of zirconia for increased performance and reduced exhaust emissions.

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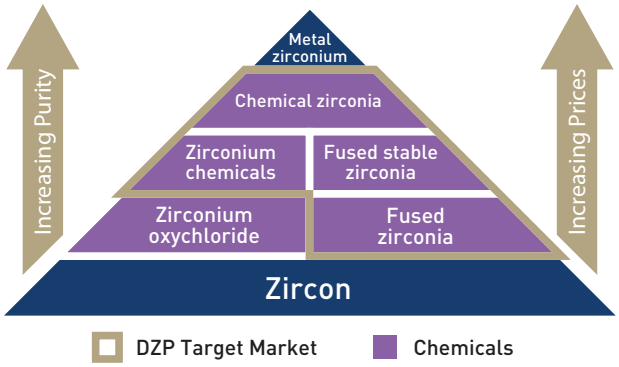
Zirconium

What is it?

Zirconium is a hard, grey-white metal with excellent corrosion resistance properties. Traditionally, it has been viewed as a valuable by-product of titania mineral sands operations.

Zirconium materials may be classified into three broad categories: fused zirconia, zirconium chemicals and chemical zirconia. Zirconium metal is produced from either fused zirconia or zirconium chemicals.



Will zirconia be mined at the Dubbo Zirconia Project (DZP)?

No, zirconia is known to occur naturally in a mineable form in very few places in the world. Currently a mine in Russia produces a small amount of zirconia (3% of world output) from a mineral called baddelyite, which is mined as a by-product of titanium mining.

The remaining 97% is currently produced in processing facilities using zircon (commonly found in mineral sands), rather than being mined from the ground. The DZP site contains no zircon or naturally occurring zirconia.

The DZP's zirconia will be produced from an ore mined at the site containing eudialyte (comprised of zirconium cyclosilicate hosting calcium, water, yttrium, and heavy rare earths). This ore will undergo a series of chemical processes in the treatment plant to produce zirconia.

Zirconia is a stable, non-reactive, non-toxic, non-radioactive material that is used in a wide range of applications.

World production

Material Produced: Zirconium materials (ZrO_2)
DZP production (2017): 16,000tpa
World Market (2017): 175,000tpa

Estimated product output from processing 1Mtpa of ore at the Dubbo Zirconia Project

The Dubbo Zirconia Project will produce four main products (in order of volume); zirconia, light rare earths, niobium and heavy rare earths.

Operating costs are estimated at A$200-250Mpa.

*AUS 0.75