

Gallium project



Gallium is a highly sought after critical mineral that plays a vital role in semiconductor technology and industries such as electronics, telecommunications and defence.

Global production is concentrated and recent market controls have heightened global supply interest.

Gallium is found in bauxite, which Alcoa mines and processes in Western Australia to produce alumina, which is then transformed into aluminium.



Alcoa is partnering with Japan Australia Gallium Associates, a joint venture between Sojitz Corporation and the Japanese Government, as well as the United States and Australian governments on a gallium processing plant co-located at Wagerup Alumina Refinery, about 120km south-east of Perth in Western Australia. The Western Australian Government has also committed to support the project.

An investment decision will be made in due course and subject to that and required approvals, production is targeted from late 2026. Production capacity is anticipated to be 100 tonnes per annum, representing about 10 per cent of global demand.

A Works Approval application to support construction and operation of the plant, by Alcoa, was lodged with the Western Australian Department of Water and Environmental Regulation in December 2025.

The project will extract further value from the bauxite Alcoa already mines and refines and help supply a critically important metal.

Indicative modelling estimates the project will deliver about 150 direct and indirect jobs during construction, and about 15-20 permanent operational jobs.

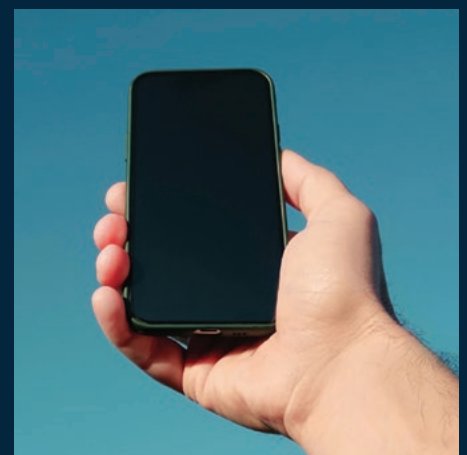
Gallium is an element that has often flown under the radar.

Its low melting point means it will turn to liquid in your hands – safely, given its non-toxic and not classified as a hazardous material.

Used in semiconductors, LEDs, high-powered computers, smartphones, solar panels and medical imaging – just to name a few of its many and varied applications – gallium plays a crucial role in modern technology.

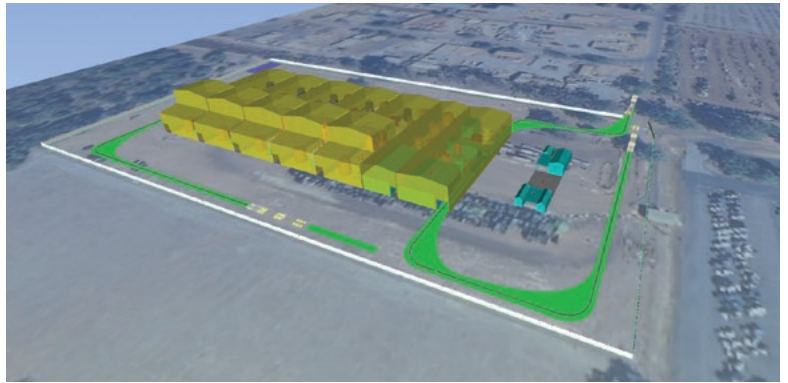
And its unique properties mean other applications are being explored including the next generation in batteries, medical treatments and hydrogen production.

Gallium is classed as a critical mineral in Australia and the United States while Japan has identified it as one of 35 minerals important to national security.

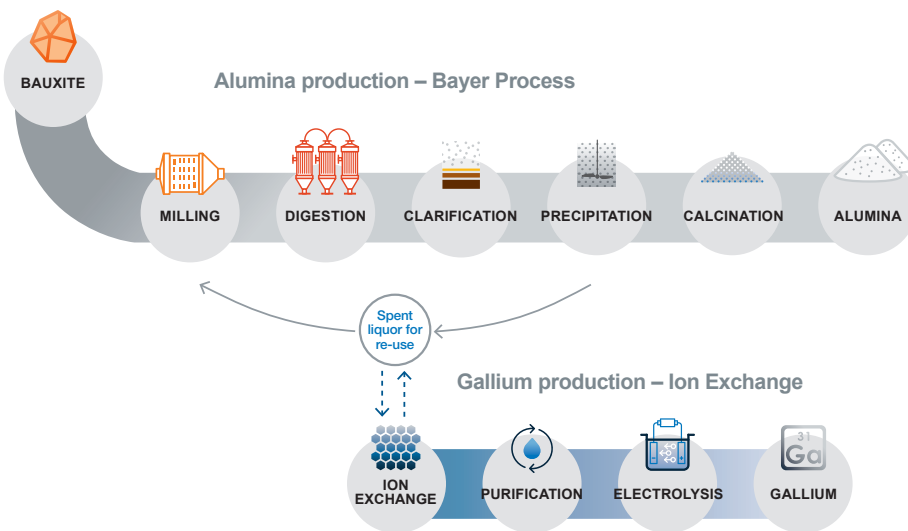


About the gallium plant

The gallium plant will be located on about 4ha in the south-eastern corner of Alcoa's Wagerup Alumina Refinery. Alcoa will operate the plant, which will be relatively small, processing up to 10 per cent of the refinery's liquor stream.



Bauxite is a mixture of different minerals. It is the primary source of aluminium and also contains gallium.



To extract alumina from bauxite, the first stage in making aluminium, the Bayer Process is used.

- Recirculating liquor dissolves alumina from the bauxite
- The alumina is precipitated and dried
- The liquor is sent back to the start of the process

Gallium is also dissolved from bauxite when leaching alumina and recovered using Ion Exchange.

- A liquor stream is pumped from the alumina refinery to the gallium plant
- The gallium is adsorbed out of the liquor onto ion exchange resin
- The liquor is pumped back to the alumina refinery for reuse
- The gallium is washed off the ion exchange resin and purified
- Electrolysis is used to precipitate the gallium from the solution

HEALTH AND SAFETY

Gallium is not radioactive or toxic. It is a corrosive material, meaning if it contacts other metals it will cause corrosion.

AIR EMISSIONS

Wagerup's overall emissions profile is not expected to change. Air emissions will be in the form of steam (water and vapour), hydrogen and oxygen. Dust is not expected to be generated as there will be no significant clearing during construction and no dry processing during operations.

NOISE

Wagerup's overall noise profile is not expected to change, with processing equipment enclosed in a large shed.

WASTE

Metal precipitate and spent resin will be transported off site for disposal by suitably qualified vendors. There will be no material change to the bauxite residue stored at Wagerup refinery.

CLEARING

No additional clearing will be required with gallium extracted from the bauxite

Alcoa already mines to produce alumina.

POWER AND WATER

Additional freshwater use will be minimised via reuse and a water treatment plant. Energy needs are expected to be met by Wagerup refinery's gas-fired power station.

TRANSPORTATION

Gallium will be packed in sealed containers and transported from site by road to different customers. At full production, 200-500 litres of gallium is expected to be dispatched weekly.