

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 the 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 is expected by early 2026 and subject to approvals, production is anticipated to start in late 2026. It is anticipated to reach 100 tonnes per annum, which represents about 10 per cent of global demand, by 2028-2029.

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 early December 2025.

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

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



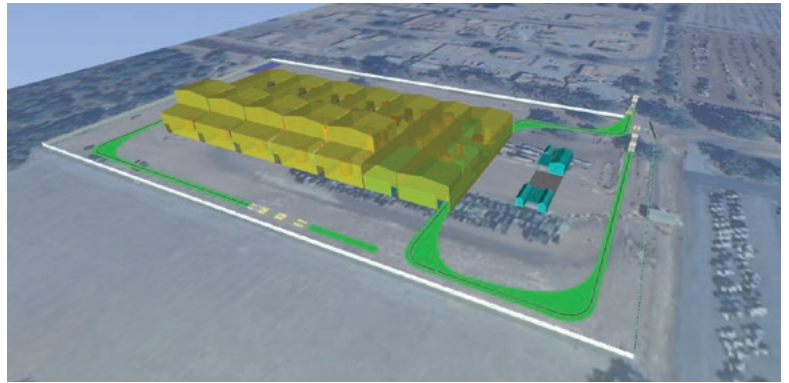
Gallium has unique optoelectronic properties when alloyed with other metals making it desirable for use in electronics and semiconductors.

Gallium has widespread application and can be found in LEDs, smartphones, computers, medical devices, and satellites. It is an important ingredient in 5G technology.

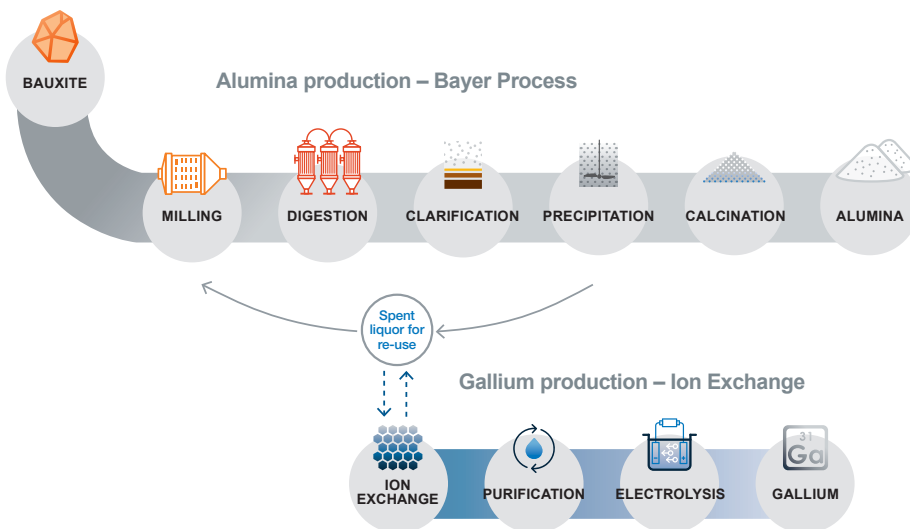


About the gallium plant

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 offsite for disposal by suitably qualified vendors. Radioactive waste will not be produced and 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 and ports. At full production, 200-500 litres of gallium is expected to be dispatched weekly.