



Mineral Technologies Spirals at Greenbushes Lithium Operations



MG12 Spiral being prepared for shipment

## Metallurgical Testing

Our world class test facilities deliver testwork for the Lithium bearing mineral spodumene. With specific gravity of 3.1 to 3.2, spodumene testing is typically conducted on the MG spiral series and shaking tables as well as wet high intensity magnetic separation (WHIMS) equipment.

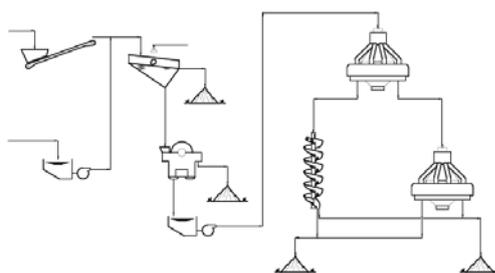
After processing, the final product  $\text{LiAl}(\text{SiO}_3)_2$  is ready for a range of lithium concentrates for bulk or bagged shipment.

At our metallurgical testing facility in Australia we test samples as small as 100 grams for characterisation (typically specific gravity and magnetic fractionation) through to larger samples up to 2000 kg for bench and pilot scale testing and flowsheet development. Our laboratory can also be configured as multi-stage pilot scale circuits to treat bulk samples (80-100 tonnes) for process testing and circuit optimisation.

## Process and Flowsheet Design

Results from our focussed metallurgical testing campaigns, together with the appropriate selection of feed preparation systems such as scrubbing, screening, classification and slimes removal, enable our design team to develop cost effective and efficient flowsheets and processing plants for each specific ore body.

The diagram shown below is a subsection of a typical example of a spodumene beneficiation flowsheet.



## Plant Design and Commissioning

Spodumene process plants are likely to incorporate the latest Mineral Technologies gravity and wet high intensity magnetic (WHIMS) separation technology.

Offering services across the project lifecycle, our commissioning expertise ensures the process plant and equipment deliver targeted grade and recovery as these projects transition to full-scale production.

## Technology

Our latest range of equipment designed for the optimisation of spodumene beneficiation includes:

- MD Spirals
  - MG Series designed for feed material generally containing up to 25% heavy mineral;
- Reading Magnetic Separators
  - Wet High Intensity Magnetic Separators (WHIMS); and
- Shaking Tables.

## Greenbushes Project

With ongoing and active involvement at Talison Lithium's Greenbushes operations in Western Australia, our spirals and shaking tables have been successfully processing spodumene and producing Lithium concentrates for over 20 years.

The Greenbushes Lithium Operations has two processing plants, one producing technical-grade lithium concentrates and one producing chemical-grade lithium concentrate. Ore containing  $\text{Li}_2\text{O}$  is fed into the processing plants which upgrade the Lithium mineral, using gravity, heavy media, flotation and magnetic processes, into a range of lithium concentrates for bulk or bagged shipment.

