Lithium Processing

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Lithium Processing Capability

ANSTO Minerals has undertaken a significant amount of work on the processing of lithium deposits to produce saleable lithium chemical concentrates. The majority of this work has been on brine feedstock, however, we have also dealt with spodumene and Li-bearing micas and clays for a number of projects.

ANSTO Minerals has considerable expertise in lithium flowsheet development and the application of roasting, leaching, purification / neutralisation, crystallization, ion exchange, membrane separation, and process water treatment unit processes.

For a majority of our lithium clients we have undertaken small scale continuous piloting, at 1-2 kg/h solid feed or 5-10 L/h brine feed, through to demonstration plant design and operation (2 m³/h brine feed). In all these projects, the production of battery grade lithium carbonate and/or lithium hydroxide has been demonstrated.

ANSTO Minerals understands what it takes to produce and analyse high purity lithium concentrates.

ANSTO Minerals has applied its considerable hydrometallurgy experience from the processing of uranium, RE, base metals and other specialty metals to develop an alternative brine process using raw brine feed. This work has been conducted in collaboration with the Sentient Group for the Salar del Rincon deposit in Argentina.

ANSTO Minerals has conducted a significant amount of process modelling and scoping level engineering to support our lithium clients. We have developed detailed process models using Ideas™ (Limn™ and METSIM packages also considered) followed by techno-economic evaluation of processing options. These efforts have directly supported NI 43-101 reports and preliminary and definitive feasibility studies.

About ANSTO Minerals

ANSTO Minerals has a 40-year track record of providing practical solutions and innovative technology to the mining and minerals processing industries. We are a team of 60+ professional scientists and technicians with expertise covering chemical engineering, metallurgy, mineralogy, chemistry, geology and radiation safety.

We provide review and consulting services, process development services as well as collaborative and contract research on uranium, rare earth and specialty metals processing, radioactivity control and management, novel flowsheet design and modelling, and scoping level engineering / cost estimates.