



PROJECT BRIEF

Chemical Refining Company Softens Lithium Chloride Streams prior to Lithium Carbonate Production with SAMCO Ion Exchange System

PROJECT OVERVIEW

When a global lithium producer needed to soften natural brine streams at its Chile facility, SAMCO delivered a high-capacity ion exchange (IX) system to support the client's lithium carbonate production.

OBJECTIVE

Remove hardness from lithium chloride brine stream for downstream lithium carbonate production at a rate of 440 GPM.

SCOPE OF SERVICE

SAMCO delivered a turnkey brine softening system, comprising detailed process design and engineering, system fabrication, controls integration, commissioning, startup, and training.

CHALLENGES

- Stringent purity requirements for lithium carbonate production
- Limited operator availability

SOLUTION

SAMCO delivered a high capacity IX system for softening of surface brine to support the client's lithium carbonate production. In order to deliver consistent purity levels, SAMCO designed the system with three identical IX columns arranged in merry-go-round configuration, allowing the system to dynamically maintain two active columns and one regeneration column at all times. To enable fast-track delivery, SAMCO designed, constructed, and installed the prepackaged system. The system design also minimized operational demands with included programmable logic controllers (PLC) and remote telemetry capabilities, enabling automated monitoring of flow, temperature, pressure, resistivity, and pH.

TECHNOLOGY

Project deliverables and equipment included:

- 440 GPM three-vessel IX system
- Softening System
- Reverse osmosis (RO) system
- Pipe rack assemblies
- PLC controls

OVERVIEW

Industry
Chemical

Location
Chile

Objective
Remove hardness from lithium chloride stream

Solution
440 GPM Ion Exchange System