



OPTIMIZING Performance. MAXIMIZING Lithium.



OPTIMIZE PERFORMANCE OF YOUR ENTIRE PROCESS

Teaming up with you, Ecolab provides Direct Lithium Extraction expertise with connected brine, water and resin insights, solutions and service — all customized to optimize your operation while minimizing operational costs.

MAXIMIZE LITHIUM



With expertise in the intricate relationship between unique brines and purification technologies, we help you optimize the design and operation of your unique Direct Lithium Extraction system to maximize the quantity and quality of your Lithium output.

MINIMIZE WATER



We apply decades of experience and technologies to efficiently manage and reuse your water resources.

OPTIMIZE SYSTEM PERFORMANCE

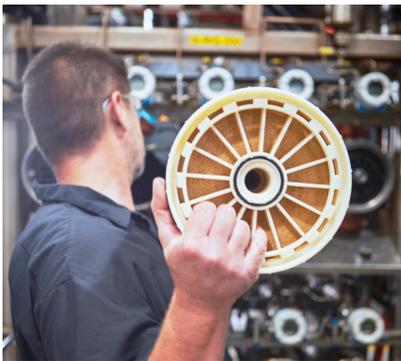


Our chemistry and digital solutions combined with world-class service and troubleshooting support drives down your total cost of operations without sacrificing performance or your sustainability goals.

TAILORED, EXPERTISE-BASED SOLUTIONS

We leverage longtime global expertise in brine treatment analysis along with high-performing Ecolab Purolite™ Resins to tailor a solution specific to your operation that maximizes Lithium extraction and operational efficiency.

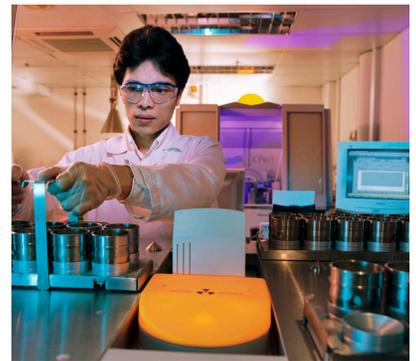
BRINE TREATMENT



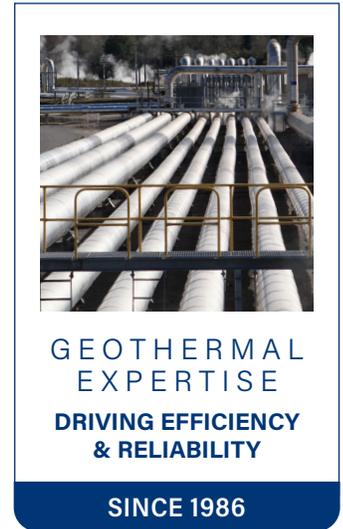
RESINS



ANALYTIC POWER

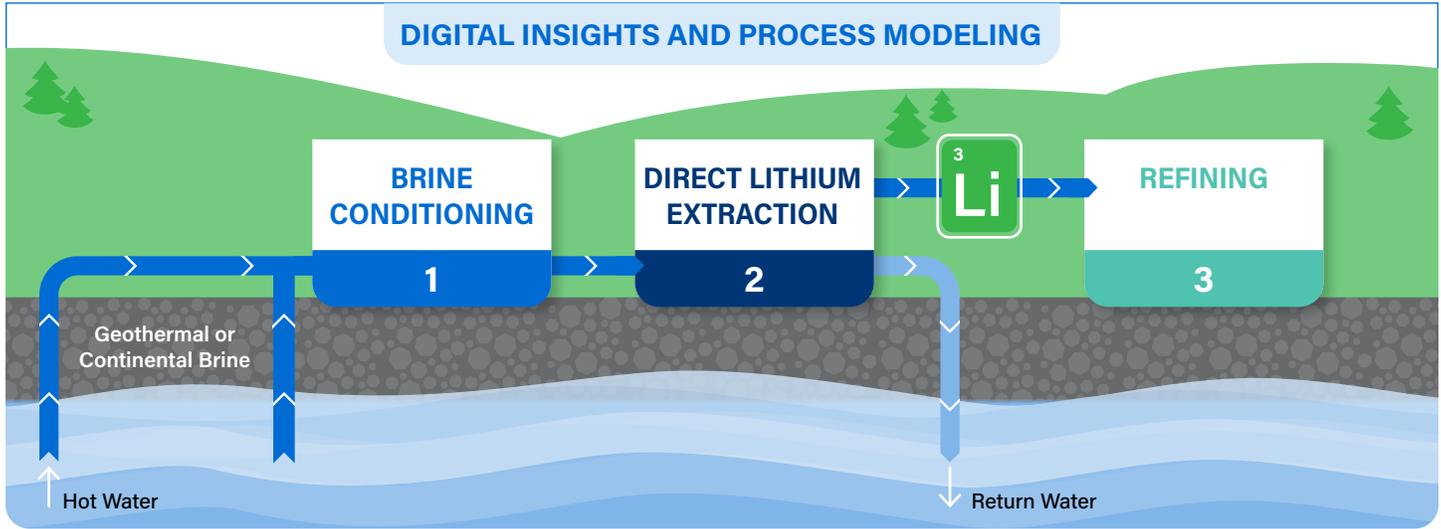


ECOLAB BRINGS TOGETHER a combined expertise of brine treatment and resin knowledge — giving us the unique capability for dually informed analytics, solutions and future innovation.



OUR CUSTOMIZED PROGRAM FOR UNIQUE BRINE

With an end-to-end Direct Lithium Extraction approach, we optimize all parts of your process — from pretreatment to extraction and conditioning to discharge.



1 BRINE CONDITIONING

- Coagulation and Flocculation Chemistries
- Advanced Polymer Activation Systems
- Brine Corrosion and Scaling Control
- Industrial Side Stream Filtration
- Ion Exchange for Brine Decalcification and Boron Removal
- RO Systems and Services
- Membrane Scale and Microbiological Control
- Global Analytical and Microbiology

2 LITHIUM EXTRACTION MEDIA

- Media Manufacturing
- Resin Performance Expertise

High-performing Ecolab Purolite™ Resins are developed with cutting-edge technology and in-depth resin chemistry knowledge; producing exceptional results.

SEPARATION | PURIFICATION | EXTRACTION
EXCELLENCE



TRUSTED 40 YEARS



Ion exchange and adsorbent resins

3 LITHIUM PURIFICATION, CONCENTRATION & REFINING

- Brine, Water and Steam Scale and Corrosion Inhibitors
- RO Membranes and Nanofiltration
- Ion Exchange Resin

DIGITAL INSIGHTS AND PROCESS MODELING

- ECOLAB3D™ Intelligence Platform
- 3D TRASAR™ Technology – Advanced Water Management System
- Process Modeling (Geomizer™ & The Reverse Osmosis Optimizer)
- Purolite Resin System Modeling (PRSM)



State-of-the-art modeling and advanced digital technologies model the ideal chemistry and equipment solutions for your operation.

DLE SOLUTIONS IN ACTION



MAXIMIZE LITHIUM

Scaling from DLE pilot plant to commercial lithium production

Location: Salton Sea

Building on full-service brine, steam generator and cooling water treatment solutions for a geothermal power plant, Ecolab is extending best-in-class services with DLE solutions in brine clarification utilizing flocculants, coagulants and RO systems as well as lithium extraction process resins.

- ▶ **Ecolab is on track to optimize operating costs and maximize lithium yield during commercial scale production.**



MINIMIZE WATER

Maintaining environmental compliance with digital modeling

Location: South America

A solar brine DLE application is looking to optimize the membrane system used to concentrate and purify the DLE eluate. Using digital modeling tools and membrane expertise, Ecolab is designing chemical treatment and operation protocol.

- ▶ **Ecolab is helping to keep the RO and nanofiltration systems clean, efficient and within environmental compliance.**



OPTIMIZE SYSTEM PERFORMANCE

Building a high-performance program at the lowest cost

Location: Western United States

Ecolab is collaborating on a DLE project in Utah to remove impurities in lithium-rich water prior to lithium extraction. Faced with high solids in the brine, Ecolab is installing UltraSand™ Plus high-efficiency filtration to help prevent fouling of the RO system and DLE resin in addition to conducting an analysis to recommend the best chemical clarification aids.

- ▶ **Ecolab is taking steps to help create a high-performing system at the lowest cost to the customer.**

PROTECTING WHAT'S VITAL™

At Ecolab, our ambition is to make the world cleaner, safer and healthier by providing and protecting the resources vital to life.

PEOPLE HEALTH

Helping people thrive by protecting their individual health, the food they eat and the spaces where they live, work and heal



PLANET HEALTH

Helping the planet thrive by protecting the earth's climate and its most valuable resource: water



BUSINESS HEALTH

Helping businesses thrive by protecting their reputation and maximizing their operating and financial performance

Contact Ecolab to help you optimize the design of your Direct Lithium Extraction system to maximize performance and Lithium.

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