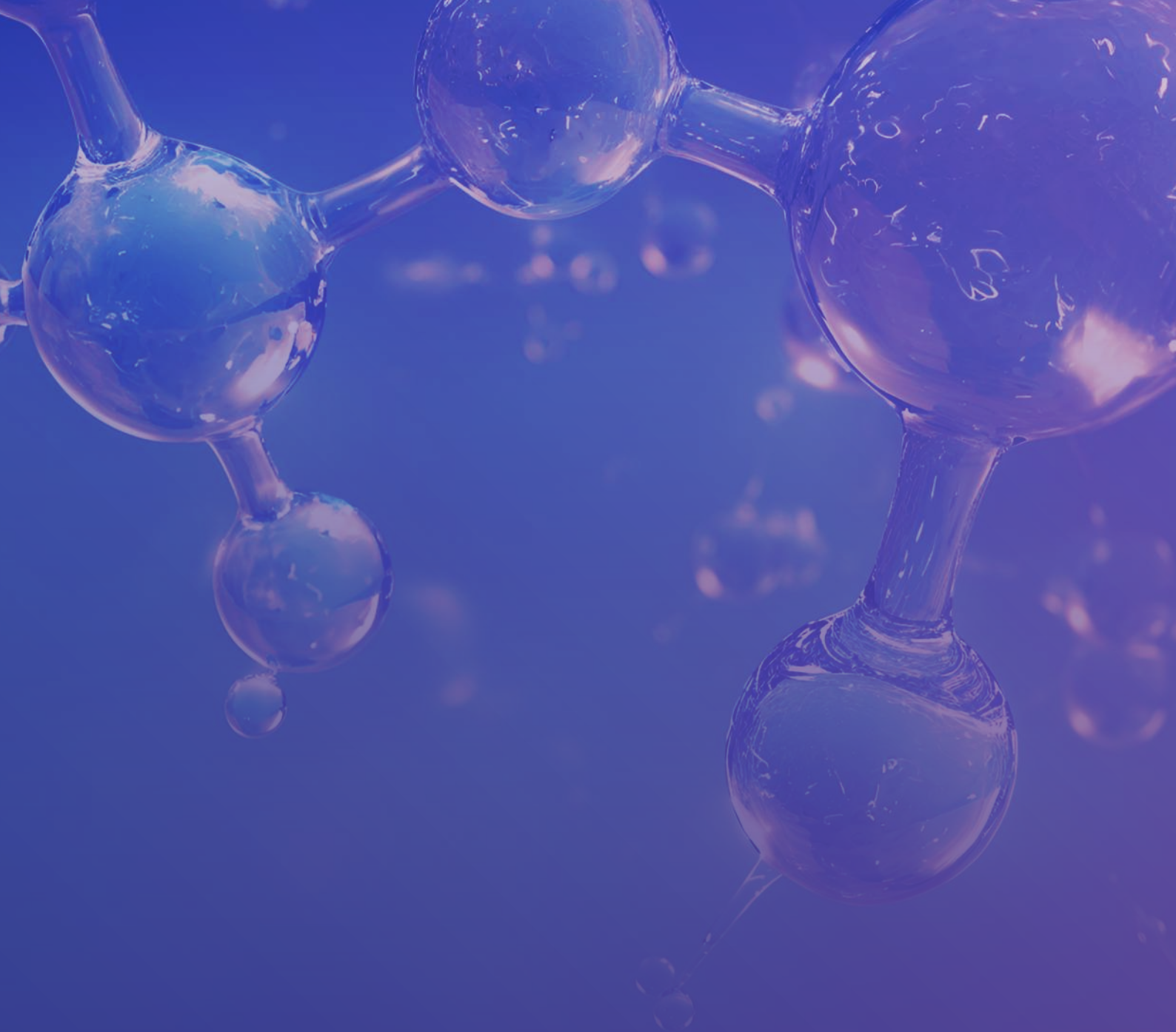


LEADING LITHIUM EXTRACTION TECHNOLOGY & PROCESSES

BICHEMICAL TECHNOLOGY LIMITED.

BiCHEM

BiCHEM

COMPANY PROFILE

WE LEAD IN THE LITHIUM EXTRACTION

We lead in the lithium extraction technologies from salt lake brines, providing comprehensive solutions across integrated plant services, operations and maintenance.
Driven by cutting-edge exploration and process innovation, we deliver precise solutions that reduce capital and life-cycle costs, enhance operational efficiency, increase reliability, and improve safety—all while minimizing environmental impact.
We empower the high-quality advancement of the new energy industry, creating enduring value for our clients and consistently delivering superior outcomes through our unwavering commitment to excellence.

WHY WE ARE DIFFERENT

Dedication
Over 90% of our team is based in salt lake regions, driving exceptional results in lithium extraction.

Inspiration
We continuously inspire innovation in efficiency and recovery, enhancing every aspect of our operations.

Transformation
We've redefined the industry with breakthrough technologies, significantly reducing costs and increasing production capacity.

PERFORMANCE INSIGHT

5+ Global R&D Centers	300+ Professionals	20+ Projects	90%+ Lithium yield

100,000+ t/a LCE Achieved Production Scale	80,000+ t/a LCE Operational Production Scale	150,000+ t/a LCE Under-construction Production Scale

OUR COMPETITIVE ADVANTAGES

Comprehensive Risk Management

- Proactive risk assessment and mitigation strategies
- Tailored solutions with continuous support
- Ensures stable and efficient project operations

Superior Technical and Operational Support

- Robust technical support infrastructure
- Strict safety and environmental protocols
- Customized solutions for project-specific needs

Supply Chain Integration and Assurance

- Global supply chain network for reliable, cost-effective resources
- Comprehensive spare parts logistics ensuring smooth operations

Data–Driven Decision Making

- Expert testing team and extensive experimental data
- Real-time production monitoring for optimal efficiency
- Accurate, data-driven operational management

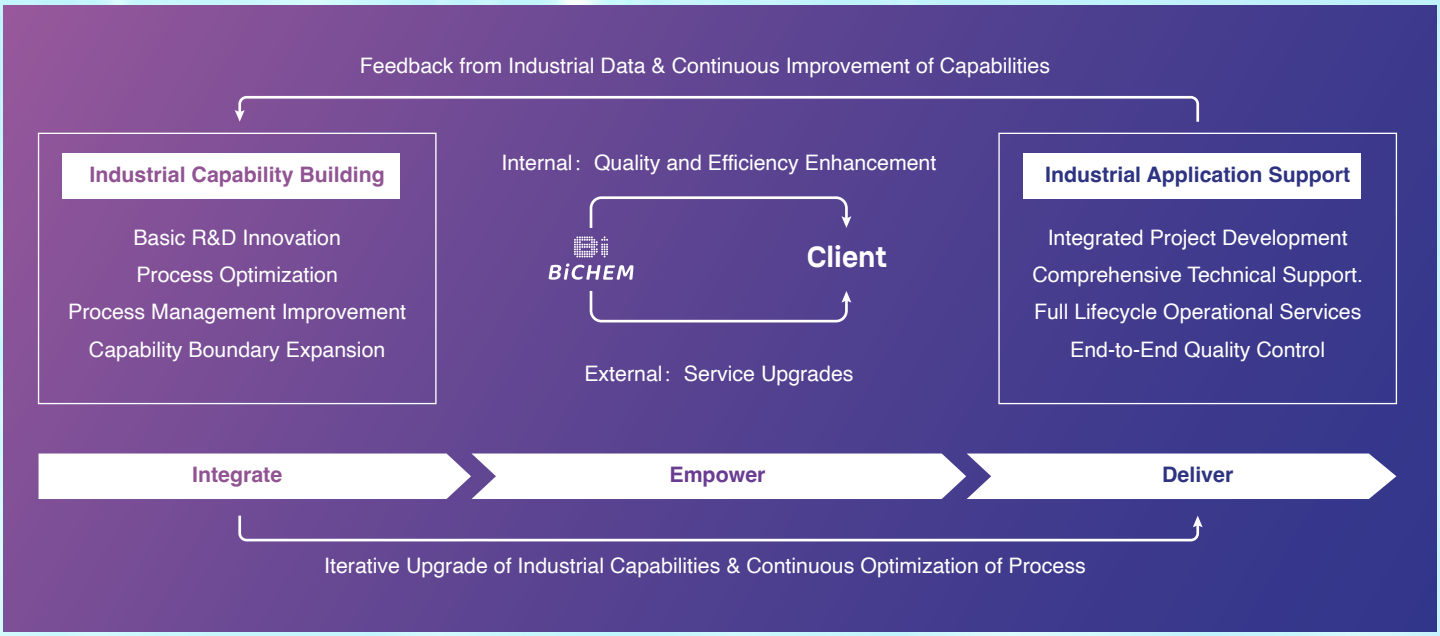
Economies of Scale and Value Maximization

- Leveraging scale to reduce costs and optimize resources
- Maximizing benefits for partners with flexible resource management

Market Leadership and Brand Excellence

- Exceptional service quality backed by deep industry expertise
- Expanding global presence, fostering strong partnerships and building brand trust

OUR PRINCIPLES AND STRATEGY



OUR INNOVATION APPROACH

DRIVING OPERATIONAL EXCELLENCE TO INDUSTRY LEADERSHIP

Operational Innovation
Focused on Production Excellence

In-depth Production Insights
Deeply embedded in production environments to quickly identify and resolve challenges throughout the process.

Solution Development and Optimization
Collaborative expert teams design and refine customized solutions tailored to real-world challenges.

Agile Response and Execution
Streamlined processes to rapidly adjust and implement technical solutions, ensuring alignment with evolving production needs.

Strategic Innovation
Driven by Evolving Scenarios

Comprehensive Business Analysis
Closely monitor customer needs, comprehensively analyze complex business scenarios, and address core requirements.

Application Scenario R&D
Develop technologies around real-world applications, ensuring technical solutions are highly adaptable to actual production environments.

Innovation Application
Ensure every innovation is effectively applied in production to continuously create value.

Pioneering Innovation
Propelled by Industry Expansion

Industry Trends Perspective
Continuously research industry trends to maintain a leading position in technology and market presence.

Business Chain Expansion
Explore and extend innovation opportunities both upstream and downstream within the industry chain, based on core business.

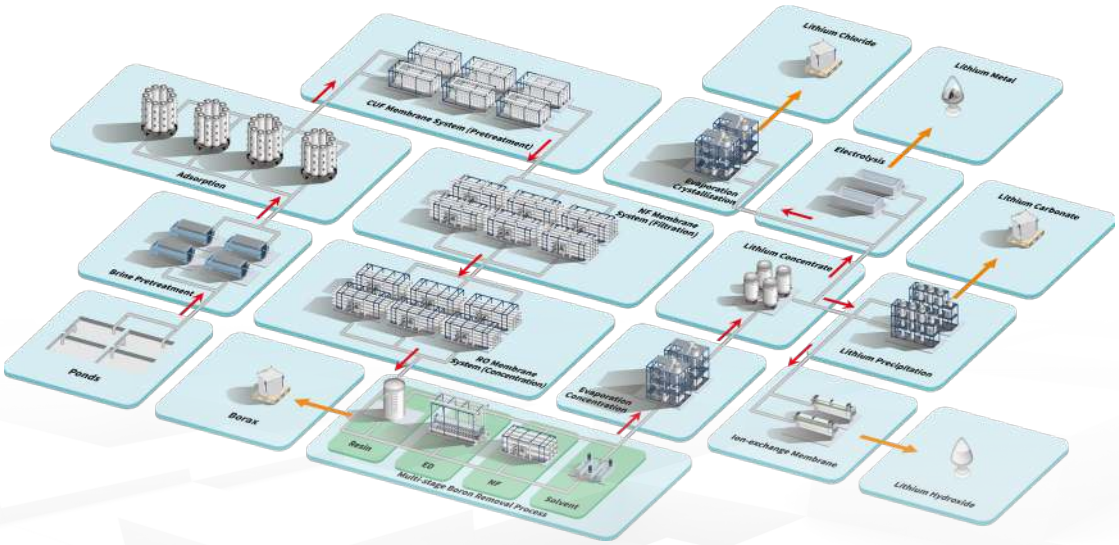
Collaborative Ecosystem Creation
Work together with industry partners to build a new ecosystem, advancing the industry jointly.

OUR BUSINESS

- Research and Development
- Process innovation
- Product Manufacture
- Technological Design
- Engineering Construction
- Operations and Maintenance

PROCESS MATRIX

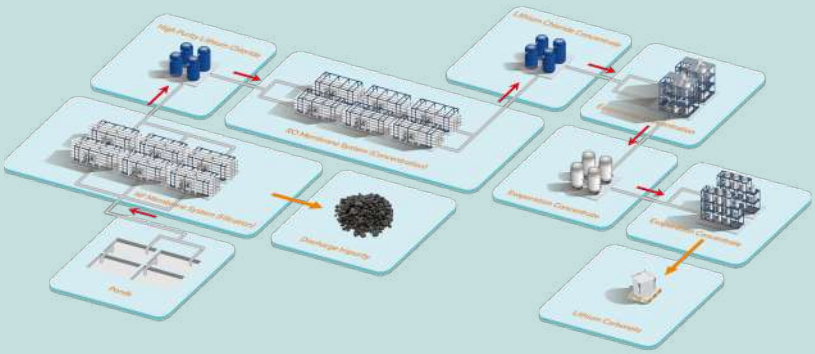
BICHEM Group leads in lithium extraction, delivering high-quality lithium products through advanced processes and integrated solutions to meet global demands.



01 Membrane Lithium Extraction Process

Process Introduction

The Membrane Lithium Extraction Process uses advanced membranes to selectively extract lithium ions from brine, offering high efficiency, low environmental impact, and sustainable production.



Process Features

- Good technological stability
- Continuous production with high degree of self-efficiency
- High and stable product quality
- Low water consumption
- Over 97% lithium yield

Application Scenarios

Lithium Extraction from Salt Lake Brine

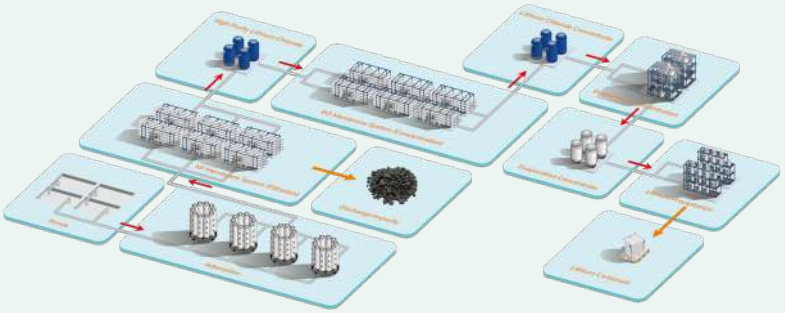
Lithium Recovery for Battery Production

Sustainable Lithium Purification

02 Adsorption Coupled Membrane Lithium Extraction Process

Process Introduction

The Adsorption Coupled Membrane Lithium Extraction Process combines advanced adsorption and membrane separation to efficiently extract and purify lithium from brine, ensuring high recovery rates, superior purity, and minimal environmental impact.



Process Features

- High lithium selectivity
- Enhanced lithium recovery
- Eco-friendly process
- Cost-effective for large-scale production
- Compatible with diverse brine types

Application Scenarios

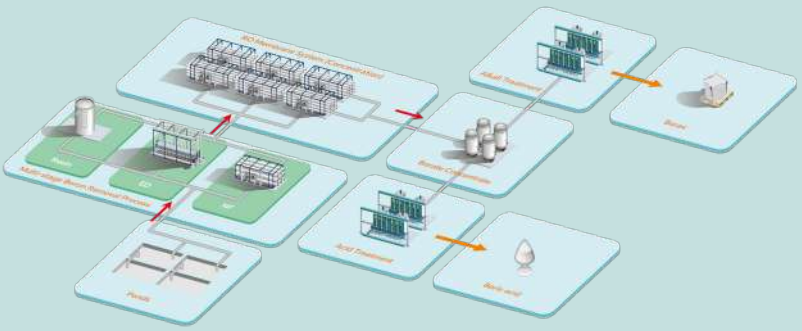
Lithium Extraction from Salt Lake Brine

Lithium Recovery from Geothermal Brine

03 High-Purity Boric Acid/Borax Production Process

Process Introduction

The High-Purity Boric Acid/Borax Production Process uses advanced filtration and separation to purify boron while extracting lithium, producing high-purity products with consistent quality, ensuring efficiency and sustainability.



Process Features

- Boracic acid/borax as a by-product of lithium extraction
- Over 80% boron yield
- Low operating costs
- Stable product quality

Application Scenarios

Integrated Boron and Lithium Extraction

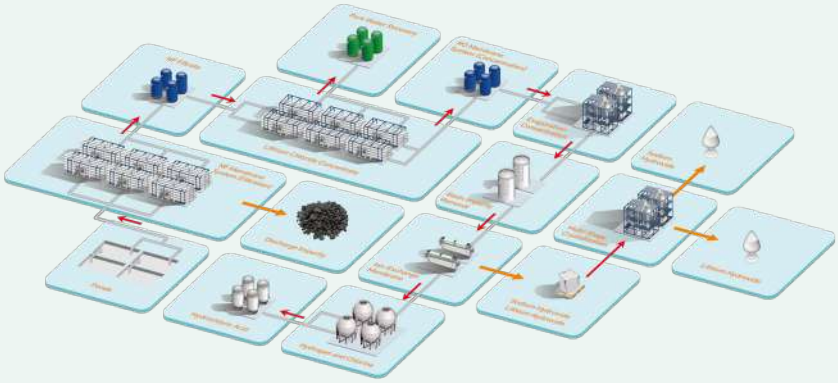
Purification of Boric Acid / Borax for Industrial Applications

Sustainable Utilization of Salt Lake Resources

04 High-Purity Lithium Hydroxide Production Process

Process Introduction

The High-Purity Lithium Hydroxide Production Process uses advanced purification, filtration, and crystallization to produce ultra-pure lithium hydroxide, ensuring quality and eco-friendliness.



Process Features

- Low energy consumption
- Low production cost
- High process maturity
- By-product hydrochloric acid
- Strong device interchangeability

Application Scenarios

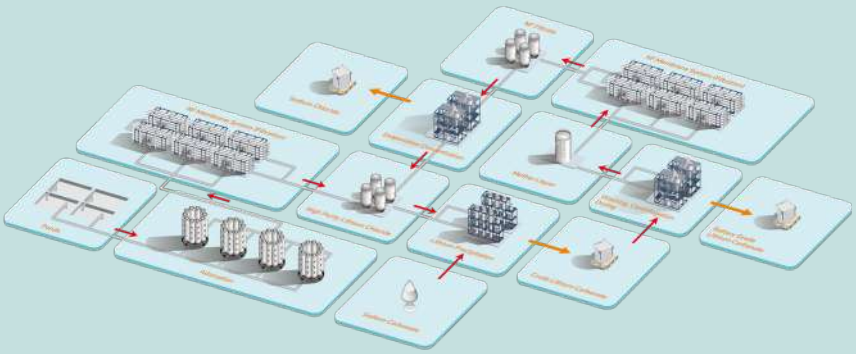
Lithium Extraction from Salt Lake Brine

Purification and Lithium Hydroxide Production

05 Graded Crystallization Process for High-Purity Lithium Carbonate

Process Introduction

The Graded Crystallization Process employs precise multi-stage filtration and controlled crystallization to produce ultra-pure lithium carbonate, optimized for high-performance batteries and electronics.



Process Features

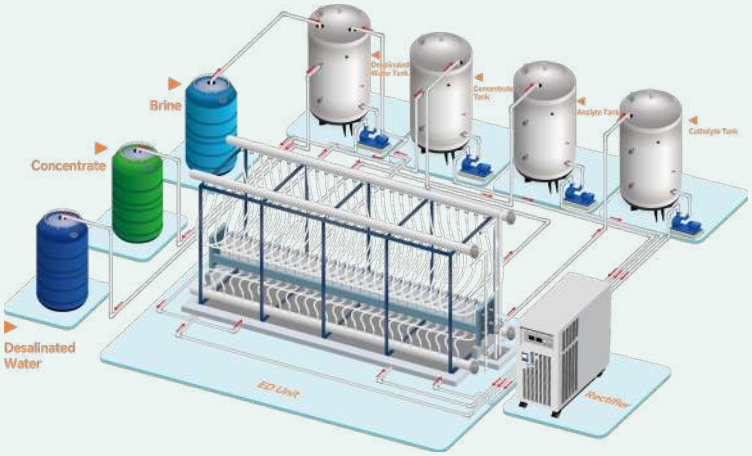
- Lithium yield exceeds 95%
- Low consumption of sodium carbonate
- Low water and energy consumption

Application Scenarios

Lithium Extraction from Salt Lake Brine

Purification and Lithium Carbonate Production

06 Electrodialysis (ED) Lithium Extraction Process



Process Introduction

The Electrodialysis Lithium Extraction Process uses an electric field and ion-exchange membranes to efficiently concentrate lithium with high purity, requiring minimal chemicals and reducing environmental impact.

Process Features

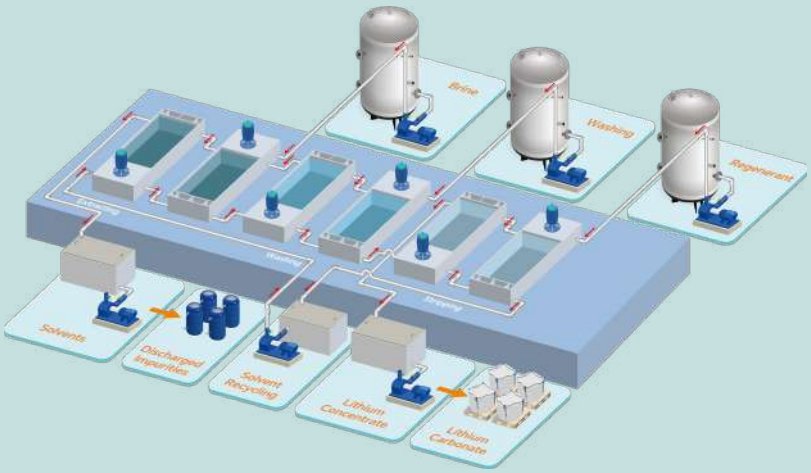
- Efficiently removes boron and silicon
- Cuts resin regeneration costs by 20%, reducing lithium loss
- Boosts water recovery by 10-30%
- Improves system stability and filter lifespan
- Enhances lithium purity by reducing silicon contamination
- Simultaneously concentrates lithium and removes boron
- Reduces evaporation stage requirements

Application Scenarios

Boron and Silicon Removal

Lithium Concentration

07 Solvent Lithium Extraction Process



Process Introduction

The Solvent Lithium Extraction Process employs selective organic solvents to efficiently extract lithium from brine, ensuring precise separation with low energy consumption and minimal environmental impact.

Process Features

- Minimal energy and water consumption
- High ion separation with reduced costs
- Over 95% lithium yield
- Produces lithium solutions with 28g/L+ and low impurities
- Simple, reliable process: extraction, washing, stripping
- Recyclable solvent for cost reduction and longer life
- Versatile for brines, spent solutions, and battery recycling

Application Scenarios

Lithium / Boron Extraction from Salt Lake Brine

Lithium Recovery from Mother Liquor

Lithium Recovery from used Batteries

PRODUCT MATRIX

Each site is a complex, integrated system, where we apply our deep expertise in combining advanced equipment, specialized products, and chemical solutions to deliver the mostcom-prehensive and effective solutions.

Ceramic Membranes

Extremely durable, providing efficient filtration of impurities in the lithium extraction process, even in harsh salt lake environments.

Nanofiltration Membranes

Selectively remove specific ions, crucial for separating lithium from other elements in brine solutions.

Reverse Osmosis Membranes

Ensure high-purity lithium extraction by effectively removing dissolved salts and impurities from brine.

Filter Cartridges

Capture fine particles during lithium extraction, protecting the efficiency of downstream processing units.

Lithium Extractants

Key chemical agents that enhance the separation of lithium from other components, optimizing recovery rates.

Lithium Adsorbents

Specialized materials designed to selectively capture and concentrate lithium ions from salt lake brine.

Scale Inhibitors

Prevent scale formation on critical equipment used in lithium extraction, maintaining operational efficiency and reducing maintenance.

OUR CUTTING-EDGE SOLUTION

Value-Driven Efficiency

Our advanced lithium extraction technologies offer exceptional efficiency, delivering high performance and cost-effectiveness without compromising quality. By optimizing lithium recovery and minimizing waste, we provide significant value to our clients through enhanced operational outcomes.

Operational Scalability

Our technology is built to scale, supporting both small and large-scale lithium extraction projects with ease. We provide flexible and adaptable solutions that grow with our clients' needs, ensuring that as operations expand, efficiency and performance remain optimal, with minimal downtime or inefficiencies.

Precision Engineering

With a team deeply embedded in salt lake environments, we deliver solutions that are tailored to real-world production challenges. Our systems are engineered for precision, combining advanced equipment with finely-tuned chemical processes to deliver high lithium recovery with minimal resource consumption.

Innovative Expertise

Our team of industry-leading experts provides deep technical knowledge and decades of practical experience in lithium extraction from salt lakes. This unique expertise allows us to design solutions that integrate seamlessly into client operations, ensuring smoother project execution and faster time to value.

Sustainability Integration

We embed sustainability at the core of our extraction processes, promoting energy efficiency, water conservation, and minimal environmental disruption. By using innovative recycling methods and cutting-edge technologies, we not only meet but exceed sustainability goals, ensuring a reduced environmental footprint across projects.

Data-Driven Performance Optimization

We employ advanced data monitoring systems, AI-driven analytics, and real-time chemical dosing technologies to fine-tune production processes. This allows us to maximize uptime, predict maintenance needs, and continuously optimize performance, resulting in higher output and reduced operational risks.

OUR INDUSTRY PRACTICES

Up to
25X
Concentration Factor

Lithium Yield
90%+

Up to
90%~100%
Water Recovery

Case A: Adsorption + Membrane Process: 13,000 t/a LCE

- 1st project extracting lithium from salt-lake brine with ultra-high Mg-Li ratio.
- 10,000 t/a LCE and expanded to 13,000 t/a LCE after 2 years.

Case B: Adsorption + Membrane Process: 25,000 t/a LCE

- Same client, 1st 20,000 t/a scale project and expanded to 25,000 t/a after 2 years.

Case C: Adsorption + Membrane Process: 10,000 t/a LCE

- Successfully achieved direct lithium extraction from brine with a very low lithium concentration. (30-50ppm)

Case D: Adsorption + Membrane Process: 2,000 t/a LCE

- Battery-grade lithium carbonate standards.
- Also recovers boron.
- Uses only 56.21% of the water compared to similar salt lakes.

Case E: Membrane Process: 20,000 t/a LCE

- DLE of battery-grade lithium carbonate from sulfate-type salt lake brine with whole membrane solution.

Case F: Adsorption + Membrane Process: 15,000 t/a LCE

- DLE of battery-grade lithium carbonate from sulfate-type salt lake brine with adsorption method and membrane process.

Case G & H: Membrane Process: 5,000+ t/a LCE

- 2 production lines with total capacity over 5,000 t/a;
- Membrane separation, concentration and refining.

Case I : Adsorption Process: over 10,000 t/a LCE

- Based on the successful completion of a thousand-ton scale adsorbent performance experiment, operations have commenced to improve lithium recovery rates.

Case J: Solvent Process: 6,000 t/a LCE

- Extraction of Lithium from Lithium Precipitation Mother Liquor, with a concentration factor of 25x, a lithium yield of ≥98%, and a strong emphasis on environmental sustainability.

BICHEM WORLDWIDE

WITH A PRESENCE IN MAJOR MARKETS WORLDWIDE, WE ARE YOUR TRUSTED GLOBAL PARTNER FOR SUCCESS.

For more information, contact us via info@bichemical.org