



Solutions for lithium applications

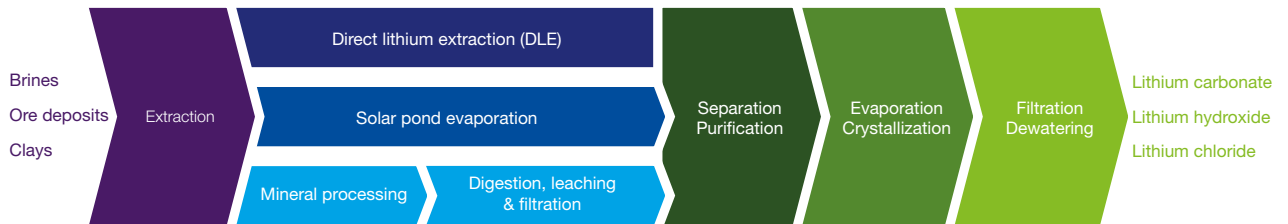
Efficiency at every step of the value chain

With a comprehensive global reference base Sulzer is the chosen equipment supplier in lithium processing. Our equipment is constantly developed for more efficient extraction and production of lithium-based compounds. [sulzer.com/lithium](https://www.sulzer.com/lithium)



Sulzer pumps for lithium applications

Sulzer supplies complete pumping and agitation packages for lithium applications, from clear liquid to slurry processes to submersible and dewatering pumps including full services and support. We also offer Nordic Water solutions for the pre-treatment phases.



Our pump and agitator selection for direct lithium extraction (DLE) covers ion-exchange, adsorption, nanofiltration, and reverse osmosis. In solvent extraction, our equipment range also includes the Kühni™ agitated columns. Additionally, we offer proven efficiency in conventional mining stages like drilling and dewatering as well as industrial water treatment and power applications.

Solvent extraction is employed to selectively capture lithium ions from brine solutions using organic solvents, which can be processed in mixer-settlers where the aqueous and organic phases are mixed and then separated in a series of stages. The Kühni™ column is an advanced alternative to mixer-settlers in solvent extraction processes, offering several advantages including higher efficiency, reduced solvent usage and smaller footprint.



RO membrane feed pump

More than a pump supplier

Along with the global demand for lithium as a critical raw material in the production of lithium-ion batteries and electric vehicles, Sulzer is active in providing and developing efficient process equipment for the various stages of lithium processing and refining.

Our long history as a process equipment supplier in mining and minerals and metals processing industries as well as our references in chemical solutions provides us with highly specific expertise and unique capabilities that our partners in lithium applications benefit from.

Efficient cost control

- High efficiency: lower energy consumption,
- Increased time between failures
- Reduced downtime costs due to improved pump reliability

Proven expertise

- Wide portfolio that can cover almost any application
- We have long experience and history with a large reference base around the world

Innovative technologies and material selection

- Broad material selection and lifetime-enhancing innovations on wear parts
- Optimizing interchangeability between common parts
- Less need for stocks reduces capital costs

Lifecycle services

- Customer trainings
- Field services: installation, startup, and commissioning
- Service agreements for pumps and agitators

NF membrane feed pump





Solutions for the full value chain

Product	Brines pumping & injection	Direct lithium extraction ¹	Solar pond evaporation	Mineral processing	Digestion, leaching & filtration	Separation Purification ¹	Evaporation Crystallization	Filtration Dewatering
SNS		●				●	●	●
AHLSTAR A, CPE, EMTECH ²	●	●	●	●	●	●	●	●
AHLSTAR WPP, PLR ²	●		●	●	●			
EMW ²	●			●	●			
CAHR							●	
JTS, SJP/MT ³	●		●					
ZE/F, NRN, PRE		●				●		
MBN, MC/D, MSD ⁴ , BBS	●	●				●		
ZPP, SMD	●							
XFP, (X)JS, (X)J, JS/C	●		●					
Salomix, Scaba	●	●		●	●	●	●	
VRN		●		●	●		●	●

1) It covers ion-exchange (IX), adsorption (AD), nanofiltration (NF), reverse osmosis (RO), and solvent extraction (SX) technology. For SX, our range of equipment includes the Kühni™ agitated column by Chemtech.

2) For sump pump application, the verticalized designs are VA/VM pump types. Diesel-driven group can be supplied.

3) For pumping of geothermal waters, SJT-GEO pump type to be considered.

4) Special design with turbine driven pump (e.g. MSD-HPRT) upon request.

Extensive product coverage

AHLSTAR end-suction single stage process pump range

Features and benefits

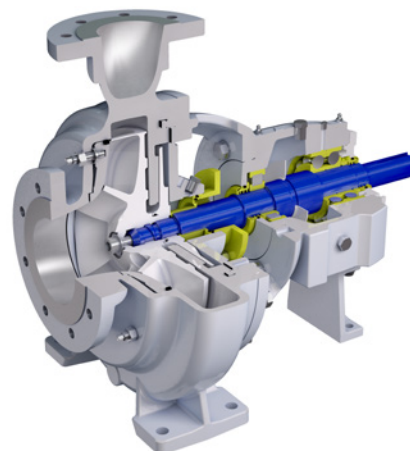
- AHLSTAR A pumps are suited to each application within lithium processing
- AHLSTAR pumps save energy, sealing water, and the environment
- Designed to meet the EN ISO 5199 standard, also complies with EN 22858 (ISO 2858) standard
- The modular interchangeability of parts and components enables low spare parts inventory
- The pump range offers the lowest total cost shaft seal concept, with dynamic seal, mechanical seals, and packing
- Every AHLSTAR is designed for fast and easy installation, maintenance, and service

Key characteristics

Capacities up to 11'000 m³/h / 48'400 USgpm
Heads up to 160 m / 525 ft.

Materials of construction

Titanium, duplex, and super duplex



MBN-RO medium-pressure stage casing pumps

Features and benefits

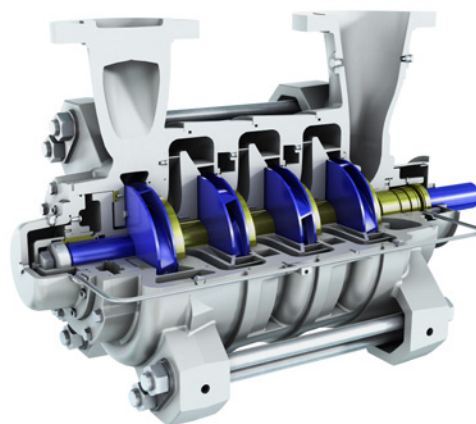
- Simple construction to minimize dimensions and reduce investment and maintenance costs
- High-quality cast impellers and diffusers for better efficiency
- Fast and easy impeller mounting
- Bearing unit can be serviced without disassembling the pumps
- Wide range of materials including duplex stainless steel grades

Key characteristics

Capacities up to 1'100 m³/h / 4'800 USgpm
Heads up to 900 m / 2'950 ft.

Materials of construction

Titanium, duplex, and super duplex



ZPP axially-split, double-suction, single-stage pump

Features and benefits

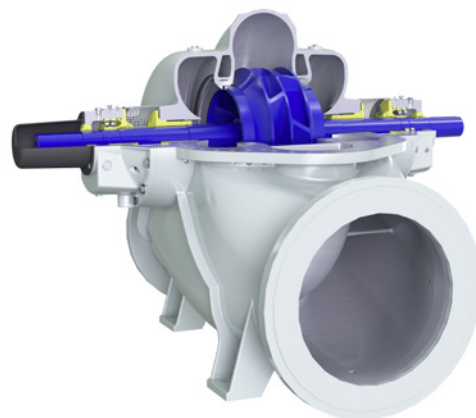
- Long and trusted experience in all industrial segments
- Pump with low pressure pulsation
- Excellent performance
- Suitable for the most demanding industrial requirements
- Exceeds requirements of international ISO 5199 standard
- Unique and superior design features minimize life cycle costs
- Quick and easy installation, safe operation, easy maintenance and service

Key characteristics

Capacities up to 25'000 m³/h / 110'000 USgpm
Heads up to 160 m / 525 ft.

Materials of construction

Duplex and super duplex



CAHR axial flow pump

Features and benefits

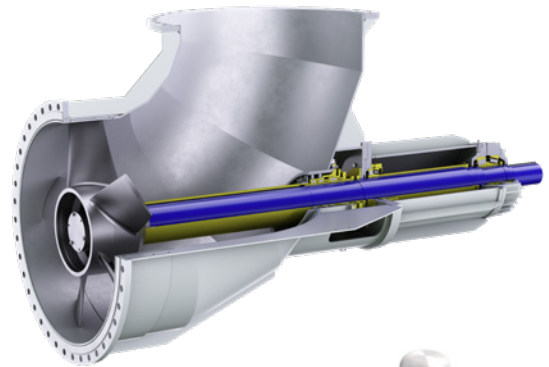
- High efficiency in high-flow and low-head applications
- High durability due to heavy-duty construction
- Maximum reliability
- Low maintenance cost

Key characteristics

Capacities up to 40'000 m³/h / 176'000 USgpm
Heads up to 9 m / 29 ft.

Materials of construction

Duplex stainless steel and super duplex stainless steel, titanium



JTS standard vertical turbine pump

Features and benefits

- Reliable pump with standard configurations for short lead time
- Packed stuffing box for reliable sealing and simple maintenance, mechanical seal is optional
- Rubber-lined product-lubricated bearing in bowls and columns for long maintenance-free periods, other bearing materials are also available
- Suction bell provided with anti-vortex ribs, tail bearing, and replaceable wear rings or bowl liner
- Axial thrust bearing in pump or in motor

Key characteristics

Capacities up to 1'500 m³/h / 8'000 USgpm
Heads up to 300 m / 1'000 ft.

Materials of construction

Duplex and super duplex



SALOMIX® L top-mounted gear-driven or belt-driven agitator

Features and benefits

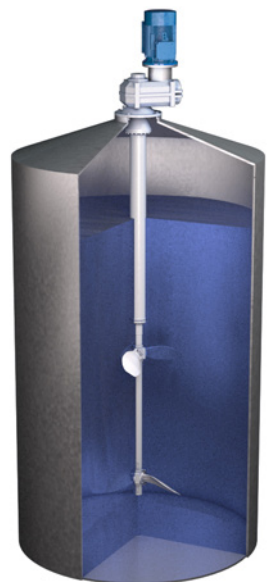
- The L-series covers gear-driven or belt-driven agitators mounted vertically on the tank top or bottom flange
- Versatile impeller options meet any process needs in compliance with the rheology of the mixed fluid
- Maximum modular component flexibility
- Applicable to tanks from 1 to 2'500 m³ / 88'285 ft³
- The large hydraulic coverage satisfies the most demanding requirements of industrial agitation applications

Key characteristics

Propeller diameter up to 8'000 mm / 316 in.
Shaft length up to 30 m / 100 ft.
Power up to 450 kW / 600 hp

Materials of construction

Duplex, super duplex and titanium



The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.

The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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