



Solutions for metals processing

Endurance for every application

Reliable and relentless performance in the harshest conditions to unlock the value of critical metals. go.sulzer.com/metals-processing



The Sulzer advantage

In the high-stakes world of metals refining, wear is inevitable, pumps will degrade over time, but our responsibility is to make them last as long as possible. Metals processing is exceptionally demanding on equipment, so we address these challenges with specialized materials and robust pump design, including high-alloy steels and advanced corrosion- and erosion-resistant materials engineered to withstand solids, chlorides, fluorides, and concentrated acids. The result is tougher, longer-lasting pumps and agitators that maximize uptime and extend operational life in the harshest conditions.



Proven expertise

- Proven experience from a variety of applications and deep product knowhow
- Custom-engineered solutions to meet specific application needs
- Continuous research and ongoing development to meet evolving requirements

Broad material selection and competence

- Broad selection of high-quality materials endures corrosion and wear
- Pump designs consider both materials of construction and hydraulic requirements to optimize performance in the field
- Lower energy consumption and longer service life with optimal material specification

Extensive product coverage

- Cutting edge technologies from a pump supplier for extending meantime between maintenance (MTBM)
- Lowest cost of ownership due to high efficiencies and optimum selection
- Reduced downtime costs due to improved pump reliability and high quality

Full life cycle services

- Well-placed sales, service, and delivery network close to you for unexpected and planned needs
- We are here to power the full lifetime potential of your equipment
- Support from a seasoned OEM with purpose-driven collaboration

Expertise in pump selection

With our application expertise, broad portfolio of industry-leading pumps, and a comprehensive selection of materials, we are experts in selecting the optimal pumps for your applications. In addition to our advanced standard selection, the pumps can be tailored with accessories and modular parts to suit the specific needs and requirements of your process.

Beat corrosion with the right pump material

Especially relevant in metals processing, the effects of various types of corrosion can be significantly diminished with materials of both the pump and its different parts matching the process conditions. We match the features of the hydraulic requirements with the pumped liquid and solids content.

Our material expertise comes in especially useful when designing solutions that endure corrosion. The more you share with us about your application conditions, the better we can ensure that your pump endures even the toughest conditions.

Hydraulic requirements

- Application
- Capacity
- Head
- Pressure
- Energy consumption

Pumped liquid

- Chemical content
- Temperature
- Density and liquid density
- pH
- Electrolytes

Solids content

- Amount of solids
- Types and shapes of particles
- Specific gravity of solids
- Average particle size



Extensive materials selection

Our extensive materials selection covers multiple corrosion-resistant steels, carbon steels and irons as well as titanium and nickel alloys. Our specialist competence in corrosive and erosive applications is built on leading materials technology. Additionally, we continuously research new material options.

Consult our experts for the optimal materials for your pumps.

See more detailed information in our cast materials brochure.



Material type	Pump type							
	AHLSTAR A	AHLSTAR WPP	CPE	EMW	PLR	VA VM	SMD ZPP	EMTECH
Duplex	●	●	●		●	●	●	●
Super duplex	●	●	●		●	●	●	●
Martensitic	●	●	●			●		
Austenitic	●		●		●	●		●
Fully austenitic	●	●			●	●		
Ferritic		●						
Wear-resistant cast iron		●		●	●	●		
Titanium	●							
Nickel alloy								●

Case studies

EMW reduces maintenance costs by 75% at a steel mill

Challenge

After years of changing new casings and propellers every three months to their process pump, a metal industry operator switched their worn-out pump to one of Sulzer's EMW slurry pumps at their melt shop.

Results

The customer was able to replace their old pump with a smaller pump with reduced acquisition costs. The selection of a smaller pump also led to a decrease of one third in its installed power consumption throughout its lifetime. The maintenance costs have decreased by three quarters with better durability. The client used to replace the pump parts four times a year, and now, with the EMW pump, only once a year is needed.



Sulzer portfolio fits the needs of lithium production from salt-lake

Challenge

The customer was looking for energy-efficient pumps for their lithium applications taking place at a high-altitude salt lake in a distant location. In addition to reliable performance the maintenance of the pumps should be kept at minimum.

Results

By selecting Sulzer's highly efficient MC pumps, the setup required fewer pieces of equipment to reach the same result and the customer invested in only two pumps instead of three lower-efficiency pumps as was their original setup. The efficiency of the selected pumps adjust to the high altitude of the site that would normally result in decreased energy usage, to compensate for the lack of efficiency.

Full lifecycle support

Refining operations cannot afford unplanned downtime. Sulzer provides comprehensive lifecycle care, from installation and commissioning to digital monitoring and rapid spare parts delivery. Our well-placed global service network ensures that expert support is always right where you need it, extending your mean time between maintenance (MTBM) and lowering your total cost of ownership.



Original spare parts

Sulzer has a worldwide network of spare parts hubs to quickly deliver the parts you need from the stock or manufacture them promptly based on your specific order. Our commitment to continuous improvement often allows us to supply parts with enhanced features, thus increasing performance and extending equipment lifetime, while reducing maintenance costs.



Field services

Our highly skilled and experienced service engineers and technicians are ready to support you in improving the performance of your equipment at your site. Our field services cover installation, start-up service, regular inspections, trouble-shooting, performance measurements, condition monitoring, and more. With service centers across the globe, Sulzer specialists will contribute to increasing the lifetime of your equipment.



Training programs

Deepen technical knowledge with Sulzer's training programs designed to boost the competence of your personnel, whether they are engineers or designers. Our goal is to enhance safety, reliability, and uptime by providing your team with the skills and knowledge they need to run your operations smoothly.



Repairs

With our cutting-edge equipment and highly skilled personnel, we can repair and refurbish even the most demanding equipment back to its original performance. We also offer modernizations that enhance the performance or increase the lifetime of your equipment.



Customer service agreements

With Sulzer at your doorstep, you can improve your competitive advantage and ensure safe operation. Our partnership program offers you customized solutions for your process improvements and future applications. When you need to free your own resources to other valuable tasks or want to save money by not keeping spare parts in your own stock, Sulzer offers various service contract options for you.

Application expertise for metals processing

Sulzer pushes technologies to their limits and beyond in order to develop state-of-the-art pumps, agitators, and other process equipment, capable of meeting even the most demanding needs of customers. Our technologies cover the entire journey from raw ore to finished metal.

Our process and dewatering pumps suit the mining stages where mineral-bearing ores are extracted from the ground. We offer durable and efficient slurry pumps for separating the valuable minerals from the surrounding rock through physical methods like crushing, grinding, and flotation, as well as chemical processes such as leaching. The metal processing stage, where the extracted minerals are refined and finished into usable metal products, requires reliable pumps and pumping equipment.

Process equipment for copper applications

We offer reliable, wear-resistant and/or corrosion-resistant process equipment for the demanding conditions in various steps of both hydrometallurgical and pyrometallurgical processes. Our solutions aim at improving uptime and productivity while reducing total cost of ownership.

Our robust pumps are engineered to withstand the harsh conditions of slurry mixed with chlorides, fluorides, and acids. They feature specialized materials and designs that minimize abrasion/erosion, corrosion, erosion-corrosion, and wear, ensuring efficient operation at minimal unplanned downtime.

The modular construction of most of our pumps together with the comprehensive material selection of their wear parts prolong the lifetime of our equipment to tackle the severe conditions. The size and capacity of our equipment can be effectively scaled according to the customer needs – with no exceptions to efficiency. Our portfolio also covers comprehensive solutions for water treatment with zero discharge.

Copper processes	Pump type					
	Single stage pumps			Chemical pump	Vertical pumps	Slurry pump
	AHLSTAR A	AHLSTAR WPP/T	SNS	CPE	VA / VM	EMW / PLR
Flotation, thickening and tailings transportation	●	●				●
Copper smelters						
Water with granulated solid particles	●	●			●	●
Cooling waters	●		●	●		
Collected floor liquids	●	●			●	
Leaching						
Sulphuric acid	●					
Solvent extraction	●					
Electrowinning	●					
Electrorefining of copper anodes						
Overflow of the electrolyte precipitation basin, washing waters and other clean liquids	●			●	●	
Underflow of the electrolyte precipitation basin	●	●			●	●
Collected floor liquids	●	●			●	
Electrolyte purification and anode slime treatment						
Corrosive and erosive liquids containing solid particles		●				●
Collected floor liquids	●	●			●	
Gas scrubbing						
Corrosive circulation water on the scrubber	●			●		

Process equipment for zinc applications

Our broad portfolio of process equipment can be adapted to the market requirements and application needs of zinc processing. Our process and slurry pump selection as well as comprehensive materials selection are ideal for reliable equipment for the various applications as well as water treatment solutions at zinc processing sites.

Our pumps are designed with materials that are corrosion resistant in sulfuric acid solutions, ensuring durability and reliability in the leaching process. Additionally, they are ideal for the transfer of sulfuric acid by-products, ensuring safety and potential reuse in other industrial processes. The pumps used in the electrowinning process can be equipped with insulation features ensuring safety and efficient operation.

Zinc processes	Pump type					
	Single stage pumps			Chemical pump	Vertical pumps	Slurry pump
	AHLSTAR A	AHLSTAR WPP/T	SNS	CPE	VA / VM	EMW / PLR
Roasting of zinc concentrates						
Cooling waters	●		●	●	●	
Liquids containing solid particles		●			●	●
Collected floor liquids	●	●		●	●	
Leaching and purification processes						
Corrosive and crystallizable clean liquids	●			●	●	
Corrosive and erosive liquids containing solid particles		●			●	●
Electrowinning						
Electrolyte liquids	●			●	●	
Zinc casting						
Cooling waters	●		●	●	●	
Gas scrubbing						
Corrosive circulation water on the scrubber	●			●	●	

Process equipment for alumina applications

With long global experience, Sulzer is a dedicated equipment supplier for alumina processing. Our portfolio of sizeable pumps is ideal for the processes and our vast application knowledge has produced innovations that reduce total cost of ownership.

Our pump expertise and material selection knowledge can be combined for the optimal equipment for applications in alumina processing and water treatment solutions at the sites. In addition to our highly developed portfolio of efficient and durable equipment, we offer a broad range of life cycle services to improve uptime and productivity.

Aluminum and alumina processes	Pump type					
	Single stage pumps			Chemical pump	Vertical pumps	Slurry pump
	AHLSTAR A	AHLSTAR WPP/T	SNS	CPE	VA / VM	EMW / PLR
Alumina refining						
Digestions of bauxite						
Grinding and desilication, digestion and leaching	●	●			●	●
Clarification						
Separation of red mud and desiliconization		●				●
Precipitation of alumina hydrate						
Carbonization and decomposition	●	●			●	●
Evaporation	●			●		
Floatation, thickening and tailings transportation	●	●				●
Aluminum smelters						
Granulated waters with solid particles		●			●	●
Cooling waters	●		●	●		
Collected floor liquids	●	●			●	

Process equipment for nickel applications

We offer highly suitable process equipment for the very demanding and corrosive conditions in nickel processing applications. Our vast knowledge of the applications ensures improved uptime and productivity while reducing total cost of ownership.

Our pumps adapt to highly corrosive environments caused by the use of various acids in the Sherritt Gordon process of nickel extraction as well as chlorine gas in the nickel chloride process. Due to the wide range of pump sizes available, the equipment can be scaled to match the demands of various flow rates. Additionally, the pumps feature advanced materials and coatings that provide superior resistance to corrosion.

Nickel processes	Pump type					
	Single stage pumps			Chemical pump	Vertical pumps	Slurry pump
	AHLSTAR A	AHLSTAR WPP/T	SNS	CPE	VA / VM	EMW / PLR
Floatation, thickening and tailings transportation	●	●				●
Nickel smelters						
Water with granulated solid particles	●	●				●
Cooling waters	●		●	●	●	
Collected floor liquids	●	●			●	
Leaching of nickel matte						
Corrosive and crystallizable liquids	●			●	●	
Corrosive, incrySTALLIZABLE and clarified liquids	●			●	●	
Corrosive and erosive liquids containing solid particles		●			●	●
Collected floor liquids	●	●			●	
Extraction processes						
Nickel and cobalt solutions and washing waters	●			●	●	
Precipitation processes						
Nickel and cobalt solutions and mixed liquids	●			●	●	
Liquids containing solid particles		●			●	●
Hydrogen reduction processes						
Crystallizable solutions	●			●	●	
IncrySTALLIZABLE solutions	●			●	●	
Collected floor liquids	●	●		●	●	
Gas scrubbing						
Corrosive circulation water on the scrubber	●			●	●	
Electrowinning						
Nickel sulfate and sulfuric acid	●			●	●	

Process equipment for lithium applications

Sulzer is the chosen partner for the value chain within lithium processing, beneficiation, and refining applications. Our portfolio of process equipment, chemical processing, and water treatment solutions covers the various stages from extraction brines, solid deposits, and direct lithium extraction to solar pond evaporation, all the way to mineral processing.

Our efficient, reliable, and low-maintenance equipment are ideal for water and energy scarce environments as well as remote locations and high altitudes. Our pump selection combined with a proper material selection prevent stress corrosion cracking in alkaline applications at elevated temperatures.

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/M/T 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, SGT-GEO pump type to be considered.

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

Industrial wastewater treatment solutions

Our approach combines industry knowledge, engineering support, and a broad portfolio spanning primary screening, biological treatment, advanced filtration, sludge management, and process optimization. Modular, containerized, and permanent options enable flexible, future-ready solutions that evolve with the needs of your site. From initial consultation and piloting to aftersales service and support, Sulzer stands alongside customers throughout the project lifecycle, all while ensuring you get the most from your investment, now and as demands change.

Resource recovery

Effluents from metals processing operations contain suspended and dissolved metals, which represent both an environmental liability and a resource opportunity. Sulzer supports this vital treatment stage with application expertise and integrated systems.

Sulzer's Nordic Water portfolio offers a wide range of filters, separators, classifiers, and dewatering solutions to concentrate recovered materials, reducing transport costs or enabling recycling. For new or evolving sites, Sulzer's modular Owatec containerized systems can be rapidly deployed for pilot testing or full-scale recovery.

Water conservation and discharge compliance

Efficient water use is both a regulatory imperative and a competitive advantage in metals processing. Our comprehensive portfolio covers the entire water treatment journey from reliable primary screening and belt filtration for solids removal to advanced biological processes. Our proven technologies enable direct water reuse or, where site requirements dictate, provide high-quality feedwater for advanced (quaternary) treatment stages such as activated carbon or membranes.

Stringent discharge standards are an everyday reality for the metals processing industry. Sulzer's technologies support compliance by integrating effective technologies for solids screening, separation, aeration, and advanced filtration to reliably remove suspended solids, metals, BOD and COD, and other pollutants.

With deep experience in process integration, Sulzer helps customers maintain peace of mind, uptime, and operational continuity in an evolving regulatory landscape.



Comprehensive product selection

Our broad selection of highly efficient pumps is suited to metals processing sites that involve water. Sulzer can supply products ranging from cooling water systems to dewatering and water treatment. In addition to the metals processing phases, we also provide high-quality pumps and process equipment for mining stages like open pit and underground mine dewatering. We also provide efficient aeration with turbocompressors.

Product	Mine water management				
	Water transport	Boiler feed	Mine dewatering	High head mine dewatering	Water treatment
Vertical wet pit pumps					
SJP	●				
Single-stage double-suction pumps					
ZPP/Z/SMD	●				
Single-stage end-suction pumps					
AHLSTAR A	●	●	●		
AHLSTAR EPP/T		●			
AHLSTAR WPP/T			●		
Slurry pumps					
EMW			●		
High-pressure pumps					
MBN		●			
MC		●			
MD		●			
Submersible dewatering pumps					
XJ and XJS					
Multistage pumps					
HPH				●	
Turbocompressors					
HST					●

The Sulzer Flow Equipment 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 Equipment 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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