Sulzer Pumps for Zinc Refining Applications
Our Experience Dedicated to Your Success

The global metal processing industry has been undergoing significant changes over the past years and now finds itself in a new era.

**Go Beyond the Limits**

A shortage of skilled workers coupled with stricter environmental regulations have prompted a change in the market dynamics; the trend is now towards remote metals operations where more reliable pumps and pumping equipment, that are less labor intensive, are required. In such a complex market, only a few manufacturers manage to understand the challenges faced in metal pumping applications. Sulzer Pumps pushes technologies to their limits and beyond in order to develop state-of-the-art pumps, capable of meeting even the most demanding needs of customers.

**Designed to Withstand Highly Abrasive Environments**

Reliability is crucial in metal industry. Due to processing, erosion, corrosion and lack of regular maintenance, pump efficiency and reliability are continuously challenged. Sulzer Pumps is well aware of the harsh conditions and develops equipment engineered to a high standard. Its experience and product knowhow are dedicated to providing sustainable and reliable solutions, selecting the most appropriate product and material, to sustain the changing environment in metal industry.

**More Than a Pump Supplier**

Sulzer Pumps supplies a complete pumping package for metal processing industry, from clear liquid to light slurry process to submersible and dewatering pumps including full services and support. By working together with Sulzer, customers benefit from:

- Increased time between failures with extended run times on equipment
- Lower energy consumption due to high efficiencies and optimum selections
- Reduced capital costs and increased profitability with current products, optimizing interchangeability between common parts
- Reduced downtime costs due to improved pump reliability
- Cutting edge technologies from a pump supplier with a strong engineering heritage and a comprehensive local support network
Roasting of Zinc Concentrates

**Cooling Waters**
AHLSTAR APP/APT process pumps or ADVANTAGE CPT chemical process pumps
- Closed, high efficiency and low NPSHr impeller
- Cast iron material A48 CL 35B (53)
- Unique dynamic shaft seal

**Liquids Containing Solid Particles**
AHLSTAR WPP/WPT wear and corrosion resistant process pumps
- Corrosion and wear resistant, open impeller
- Corrosion and wear resistant stainless steel material Avesta 654 SMO *
- Double mechanical shaft seal or unique dynamic shaft seal

**Collected Floor Liquids**
AHLSTAR ASP/AST self priming process pumps or WSP/WST wear resistant self priming process pumps
- Open, high efficiency and low NPSHr impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Integrated vacuum structure

**SALOMIX® L Agitator**
- Gear or V belt drive
- Paddle or propeller
- Different seal options
- Applicable stainless steels

Leaching and Purification Processes

**Corrosive and Incrystallizable Clean Liquids**
AHLSTAR APP/APT process pumps or ADVANTAGE CPT chemical process pumps
- Closed, high efficiency and low NPSHr impeller
- Corrosion and wear resistant stainless steel material ASTM A890 3A (41)
- Double mechanical shaft seal or unique dynamic shaft seal

**Corrosive and Erosive Liquids Containing Solid Particles**
AHLSTAR WPP/WPT wear and corrosion resistant process pumps
- Corrosion and wear resistant, open impeller
- Corrosion and wear resistant stainless steel material Avesta 654 SMO *
- Double mechanical shaft seal or dynamic shaft seal

*) Avesta 654 SMO is a trade mark owned by Avesta Sheffield which has granted Sulzer Pumps Finland Oy licence to produce this material.
Electrowinning of Zinc

Electrolyte Liquids
AHLSTAR APP/APT process pumps or ADVANTAGE CPT chemical process pumps
- Open impeller
- Corrosion and wear resistant stainless steel material ASTM A890 5A (4T)
- Unique dynamic or ready fitted double mechanical shaft seal
- Special floating installation

Zinc Casting

Cooling Waters
AHLSTAR APP/APT process pumps or ADVANTAGE CPT chemical process pumps
- Closed, high efficiency and low NPSHr impeller
- Cast iron material ASTM A48 CL 35B (53)
- Unique dynamic shaft seal

Gas Scrubbing

Corrosive Circulation Waters of the Scrubber
AHLSTAR APP/APT process pumps or ADVANTAGE CPT chemical process pumps
- Closed, high efficiency and low NPSHr impeller
- Corrosion and wear resistant stainless steel material ASTM A890 1B (4L)
- Double mechanical shaft seal or dynamic shaft seal

Other Utilities

Water transport
The B series of vertical line shaft pumps consist of BK, BS and BP ranges. They are primarily used in water lift, transfer and cooling water applications.
AHLSTAR NVP/NVT non-clogging vertical pumps are intended for all kinds of hard applications with wastewater, slurries or waste stock.
SM/SMN single stage double entry pumps are used across a broad range of industries in liquid transport and transfer applications.
ZPP and Z22 double suction pumps are designed for applications including cooling and circulating water pumping.

Boiler Feed
The HPP/HPT high pressure multistage pumps are used for pumping clean or slightly contaminated liquids in high pressure applications in various industries.
The M series of ring section multistage pumps consist of MB, MC, MD and ME ranges. A wide range of common hydraulic components and bearing assemblies are used within the 4 standard pressure ranges.

Mine Dewatering
The HPH/HPL multistage pumps are specifically designed for mine dewatering applications. Their robust construction is designed to combat the highly abrasive environment in which they operate.

XJ/XJS Dewatering
Whether on the surface or underground, the conditions in mines are harsh. Besides the mud, slurry, stones and rocks, there are large volumes of water to remove in order to keep production moving.
# Sulzer Pumps and Agitators Range

<table>
<thead>
<tr>
<th>Type of Pump</th>
<th>Pump Name</th>
<th>Capacities</th>
<th>Heads</th>
<th>Pressures</th>
<th>Temperatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multistage</td>
<td>HPH</td>
<td>130 to 1,000 m³/h Up to 1,000 USgpm</td>
<td>120 to 1,800 m 600 to 5,000 ft</td>
<td>18 Mpa 2,610 psi</td>
<td>Up to 105°C Up to 220 °F</td>
</tr>
<tr>
<td></td>
<td>HPL</td>
<td>36 to 1,000 m³/h Up to 1,000 USgpm</td>
<td>40 to 400 m 190 to 1,300 ft</td>
<td>4 Mpa 580 psi</td>
<td>Up to 105°C Up to 220 °F</td>
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<tr>
<td></td>
<td>MBN</td>
<td>Up to 700 m³/h Up to 3,080 USgpm</td>
<td>Up to 900 m Up to 2,950 ft</td>
<td>Up to 10 Mpa Up to 1,450 psi</td>
<td>Up to 180°C Up to 355 °F</td>
</tr>
<tr>
<td></td>
<td>MSD</td>
<td>Up to 3,200 m³/h Up to 14,000 USgpm</td>
<td>Up to 2,800 m Up to 9,500 ft</td>
<td>Up to 30 Mpa Up to 4,400 psi</td>
<td>Up to 200°C Up to 400 °F</td>
</tr>
<tr>
<td></td>
<td>MSD</td>
<td>Up to 3,200 m³/h Up to 14,000 USgpm</td>
<td>Up to 2,800 m Up to 9,500 ft</td>
<td>Up to 30 Mpa Up to 4,400 psi</td>
<td>Up to 200°C Up to 400 °F</td>
</tr>
<tr>
<td>End Suction</td>
<td>AHLSTAR</td>
<td>Up to 9,000 m³/h Up to 40,000 USgpm</td>
<td>Up to 160 m Up to 525 ft</td>
<td>Up to 2.5 Mpa Up to 360 psi</td>
<td>Up to 210 °C Up to 410 °F</td>
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<tr>
<td></td>
<td>ZE/ZF</td>
<td>Up to 2,600 m³/h Up to 11,440 USgpm</td>
<td>Up to 300 m Up to 1,000 ft</td>
<td>Up to 10 Mpa Up to 1,450 psi</td>
<td>Up to 425°C Up to 800 °F</td>
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<td></td>
<td>CPT</td>
<td>Up to 1,700 m³/h Up to 7,500 USgpm</td>
<td>Up to 290 m Up to 950 ft</td>
<td>Up to 2.5 Mpa Up to 375 psi</td>
<td>Up to 260°C Up to 500 °F</td>
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<tr>
<td>Submersible</td>
<td>ABS XJ and J</td>
<td>Up to 1,220 m³/h Up to 5,390 USgpm</td>
<td>Up to 100 m Up to 330 ft</td>
<td>Up to 1.3 Mpa Up to 190 psi</td>
<td>Up to 40°C Up to 104°F</td>
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<tr>
<td></td>
<td>ABS XJS</td>
<td>Up to 110 m³/h Up to 475 USgpm</td>
<td>Up to 40 m Up to 130 ft</td>
<td>Up to 0.52 Mpa Up to 75 psi</td>
<td>Up to 40°C Up to 104°F</td>
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<tr>
<td></td>
<td>ABS XFP</td>
<td>Up to 8,780 m³/h Up to 38,675 USgpm</td>
<td>Up to 110 m Up to 360 ft</td>
<td>Up to 1.5 Mpa Up to 220 psi</td>
<td>Up to 40°C Up to 104°F</td>
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<tr>
<td>Vertical</td>
<td>NKP/NKT</td>
<td>Up to 430 m³/h Up to 1,600 USgpm</td>
<td>Up to 55 m Up to 200 ft</td>
<td>Up to 1 Mpa Up to 150 psi</td>
<td>Up to 95°C Up to 205 °F</td>
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<tr>
<td></td>
<td>NVP/NVT</td>
<td>Up to 1,220 m³/h Up to 6,000 USgpm</td>
<td>Up to 85 m Up to 300 ft</td>
<td>Up to 1 Mpa Up to 150 psi</td>
<td>Up to 95°C Up to 205 °F</td>
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<td>SJP</td>
<td>200 to 54,500 m³/h Up to 240,000 USgpm</td>
<td>Up to 12 m Up to 40 ft</td>
<td>Up to 0.2 Mpa Up to 30 psi</td>
<td>Up to 50°C Up to 120 °F</td>
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<tr>
<td></td>
<td>SJ D</td>
<td>9 to 18,000 m³/h Up to 70,000 USgpm</td>
<td>Up to 1,360 m Up to 6,000 ft</td>
<td>Up to 15 Mpa Up to 2,150 psi</td>
<td>Up to 205°C Up to 400 °F</td>
</tr>
<tr>
<td>Double Suction</td>
<td>SMN</td>
<td>Up to 10,000 m³/h Up to 44,000 USgpm</td>
<td>Up to 200 m Up to 650 ft</td>
<td>Up to 3 Mpa Up to 435 psi</td>
<td>-10 to 50°C 15 to 120 °F</td>
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<tr>
<td></td>
<td>ZPP/Z22</td>
<td>Up to 25,200 m³/h Up to 130,000 USgpm</td>
<td>Up to 160 m Up to 525 ft</td>
<td>Up to 2.5 Mpa Up to 360 psi</td>
<td>Up to 120°C Up to 250 °F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agitator Name</th>
<th>Pressures</th>
<th>Temperatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>SALOMIX® L</td>
<td>Up to 1.6 MPa Up to 230 psi</td>
<td>Up to 180°C Up to 355 °F</td>
</tr>
<tr>
<td>Scaba</td>
<td>Up to 2.5 MPa Up to 360 psi</td>
<td>Up to 350°C Up to 660 °F</td>
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