Separation expertise
for your success in potash
How can we help improve your potash production?

As populations surge, so does the demand for high-quality potash for food and biofuel production. So how will your business capitalize on this growth? Higher throughput? Better product quality? Whatever your strategies, we offer the world’s broadest range of dewatering, brine, and tailings treatment solutions to help you achieve them.

Meeting the demands of a growing industry
Having served major potash producers across the globe for over 80 years, we understand that every processing step has its own unique challenges. For some, it’s about implementing innovative ways to save space, water and energy. For others, it’s a matter of achieving the lowest possible moisture content in the final product, whether through substitution, upgrades, or entirely new installations.

Customized solutions with remarkable results
Whatever their specific needs, each of our customers faces constant demands for more reliable, efficient, and profitable output. In Belarus, this meant overcoming the limitations of traditional solutions with a fractional dewatering system that boosted capacity, lowered energy costs and achieved a 30% reduction in residual moisture. In a solar evaporation plant in South America, we helped to remove a tailings bottleneck with the continent’s highest capacity disc filters, thus ensuring 300,000 t/y of additional liquid capacity while reducing downtime by nearly one-third.

A partner with deeper resources
For every such challenge, ANDRITZ SEPARATION provides a complete range of mechanical separation and thermal drying systems to solve it – from centrifuges, thickeners, and specific filters to filter presses and fluidized bed dryers. And as a preferred supplier, we are the go-to source for preferred separation technologies and consulting to potash contractors worldwide. It’s all part of the experience, financial strength, and technical resources of the ANDRITZ GROUP, a global organization with 250 production and service sites in 40 countries. So where is your next opportunity? And how can we help you make the most of it?
Shifting raw material prices. Scarce resources. A fast-changing global market. As the world leader in potash separation and drying, our aim is to surround every challenge you face with a more comprehensive solution. One that places your needs at the center of everything we do.

Broader solutions for any process step
Ever since installing our first potash centrifuge in 1928, our ambition has been to tailor the right solution and services for any requirements – whatever the capacity, process conditions or type of end product. Over the years we’ve stayed true to this vision, and today process more tonnage than all other brands combined. This means that as soon as your raw materials are above ground, we’ve got you covered with a total production solution – every single process step along the way. It’s all part of our effort to promise lower life cycle costs, higher availability and capacity, better end product quality, and longer equipment lifetime than any supplier on the market.

Global technology leaders
Our decades of know-how have resulted in some of the industry’s most innovative, efficient, and reliable solutions. Many high-capacity producers, for instance, turn to us for our uniquely efficient conical screen bowl decanters or large-diameter disc filters. Others rely on our patented fluidized bed systems with prism jet gas distribution, maximized air temperatures, and easy maintenance. Whether it’s an individual machine, a smaller module or a modular project, we’re applying this vast expertise to meet the needs of global players and smaller companies every day throughout the world.

Solving the world’s potash challenges demands a more complete approach
Where we fit into your production line

As the separation experts in brine refining, we supply complete systems and multiple technologies for all above-ground process phases. Whether it’s dewatering, thickening, compacting, or after-treatment, we can recommend the optimal solution to improve your productivity in any type of potash separation.

To many leading customers, we’re best known as the suppliers of high-capacity, energy-efficient equipment. Our highly efficient pusher centrifuge, for instance, is capable of achieving 25% better throughput and less moisture than equivalent machines of the same size. Others know us for our unique fluidized bed systems, which use patented prism jet gas distribution plates to ensure uniform product fluidization and conveying. To create maximal thermal energy with minimal air; they combine an easy-to-maintain full metal construction with hot air of up to 650°C. Fewer new customers are aware of our fractional dewatering expertise, which separates the slurry to achieve significantly lower moisture content and energy costs. And these are just a few of the hundreds of ways we’re helping potash customers push the limits of productivity throughout the world.

How can we optimize your process?

Looking for new ways to boost capacity while reducing energy costs? Look no further than our innovative conical screen bowl decanter. Now installed on the North American market, this unique solution enables 15% higher throughput with 20% less power consumption than traditional units. All to better meet our customers’ fast-changing needs. What are yours?
Tailored solutions
for every product deliquoring need

Our deliquoring solutions serve nearly half the world’s potash production. For some it’s all about achieving the highest availability and throughput. For others it all comes down to a longer lifetime for each individual part or the lowest possible residual moisture. Whatever the case, we not only offer more deliquoring choices – we back them up with a customized solution and service package for any need.

Unmatched expertise in deliquoring
For more than 85 years, we’ve helped our customers lead the way with innovative approaches to all types of potash products, brines, and applications. With more than 570 installations for product deliquoring alone, we’ve proven ourselves capable of managing everything from complete system design and customization to intake and exhaust air installation, intermediate product handling, electrotechnical installation, and control systems.

Tailored static thickening solutions
Among our more innovative solutions is a specially equipped static thickener that allows you to reduce flocculant consumption, ensure faster settlement, and minimize your thickening area. Like all our thickeners, its key strength lies in combining a superior volumetric capacity with faster thickening rates.

The market’s widest range of choices
More than just offering the broadest range of equipment, we take pride in rethinking the typical continuous process approach of thickening and vacuum filtration. Often, this means a total process redesign where fine and coarse fractions are handled separately – each with the right equipment for the job. The result is the best of all worlds: higher capacity with lower residual moisture, and therefore lower energy costs along with a significantly smaller footprint. It’s this comprehensive approach to potash deliquoring that keeps our customers ahead of tomorrow’s challenges.

As populations rise and agricultural land becomes increasingly scarce, global demand continues to rise for potash – one of the main compounds in agricultural fertilizers.
High-capacity tailings dewatering
A success by any measure

In South America, a major global minerals processor had reached an insurmountable bottleneck. Despite sitting atop one of the world’s richest brine sources, the company was limited by its tailings dewatering capacity. Too little saturated brine meant no new thickening resources, and no more growth for a highly profitable business in potassium chloride.

Removing the bottleneck, once and for all
To free up more tailing liquids for recirculation, the facility needed a completely new solution. One that would deliquor significantly more tailings to unleash a new, steady supply of liquids. Having recently installed an innovative new technology in tailings treatment, we knew we had just the right solution: a pair of newly developed disc filters with large disc diameters for the highest possible filtration rates. This would be the first such installation in South America, and only the second of its kind in the world.

Unleashing new profit streams
Thanks to this innovative approach, the plant has achieved not just 135 t/h in additional brine yield, but also a full 300,000 t/y of new production capacity as a result. This allows for a more flexible operation with substantially lower production costs. More remarkably, the entire tailings treatment process has now reduced downtime by as much as 30%. With figures like these, it’s clear that a complete return on investment won’t be far behind.

“No solution on the market can match our latest disc filters in terms of sheer scale, or with such high filtration rates. This gives our customers a major boost to their tailings capacity and brine yield, with nearly one-third less downtime.”

ANDRITZ SEPARATION APPLICATION MANAGER POTASH
Efficient, low-cost dry processing

Our dry processing solutions are recognized around the world for their reliably low cost of operation. Compared with additional screening, our fluidized bed classifier not only removes more fine particles than with additional screening – it does so more efficiently and with a significantly smaller footprint. Its full metal, primarily carbon steel construction ensures robust performance. For further conditioning, a high-capacity fluidized bed conditioner with throughput up to 1,000 t/h can be installed to ensure significant improvements in electrostatic separation efficiency within the ESTA process.

High-purity wet processing

To help you boost product purity, we supply fluidized bed dryer and cooler technologies that give you a wide range of process flexibility. Hot drying gas, for instance, can be generated by natural gas or diesel, and exhaust air can be dedusted either by bag house filter or wet scrubber. In any configuration, our fluidized bed dryer allows you to handle capacities in excess of 300 t/h, all within a minimal footprint enabled by drying air up to temperatures of 650°C. The full metal construction in specially developed heat- and corrosion-resistant metal makes it possible to handle these extreme temperatures while ensuring non-stop performance for years to come.
Optimized glazing technologies for added product value

Drying? Polishing? Or classification? When it comes to achieving just the right product for the market, sometimes compacting just won’t suffice. This is where our seamless lineup of glazing technologies comes in – to ensure your end product is dust-free, easily handled, and perfectly refined with the lowest possible energy consumption.

When compaction alone isn’t enough, we provide a full range of after-treatment solutions to ensure your end product is precisely what the market demands. Depending on the grade of potash, this could include fluidized bed heaters, roasters, classifiers, high- and low-temperature dryers and coolers, and more.

The sharp breaking edges generated by crushing within the compaction process are smoothed off by rewetting the particles in a rotating drum or double-shaft mixer. After this, they are dried and polished in a fluidized bed glazer to obtain a dust-free granulate which can be easily handled.

In most cases, this means applying minimal thermal energy to your granulate with our stationary fluidized bed dryer. For customized applications, we can also configure vibrated solutions, combined dryer/coolers, or – for the hardest surface – high-heat dryers with separate cooling beds. It’s all up to you – and your customers – to decide where the true value lies.

### Fluidized Bed Glazing

**360 t/h IN A SINGLE GLAZING LINE**

**DUST-FREE GRANULATE WITH HARDENED SURFACE**

**WIDE PORTFOLIO RANGE FOR TAILORED SOLUTIONS**

**PREPARATION FOR COMPACTING**

**COMPACTING, CRUSHING & SCREENING**

**MOISTURIZING**

**FLUID BED GLAZING**

**FLUIDIZED BED HEATER DDC/HDC**

- To be applied if temperature of potash feed to the compaction process is too low for optimal compaction results

**FLUIDIZED BED ROASTER DDC**

- When the concentration of additives from the upstream flotation process is too high within the potash feed to the compaction process, those additives are “roasted off” at higher potash temperatures in a fluidized bed roaster to achieve optimal operation of the downstream process.
- High-temperature design (up to 650°C hot air) allows for smaller machine footprint.

**FLUIDIZED BED CLASSIFIER DDC**

- Removes fine particles from granulated potash that could not be removed by screening.
- Smaller footprint than alternative additional screens.
- Can be integrated and delivered by ANDRITZ SEPARATION, together with the downstream fluidized bed glazer.

**MOISTURING DRUM OR DOUBLE SHAFT MIXER**

- Typically a third-party equipment for partial dissolving of the surface of the compacted potash.
- Can be integrated and delivered by ANDRITZ SEPARATION, together with the downstream fluidized bed glazer.

**HIGH-TEMPERATURE FLUIDIZED BED DRYER DDC AND FLUIDIZED BED COOLER DDC**

- For fluid bed glazing at higher product temperatures (>150°C), after which the product is cooled in a separate fluid bed cooler.
- Separate dryer and cooler can be individually optimized without compromises in machine geometry.

**STATIONARY FLUIDIZED BED DRYER/COOLER DDC**

- For low-temperature (<150°C) glazing with limited feed parameters and final moisture content <0.3% wt.
- Lower investment costs compared to two separate units.
- Less maintenance due to stationary equipment.
- Low thermal energy consumption at acceptable final moisture.

**VIBRATING DRYER/COOLER VDC**

- Vibrating design allows for shallow bed with uniform particle retention time.
- Partial heat recovery is optional by recirculation of cooling exhaust air.
Put 150 years of OEM experience to work

Need to optimize your process? Boost availability? Ensure non-stop productivity? When you work with ANDRITZ SEPARATION, you gain access to one of the world’s largest OEM manufacturers for solid/liquid separation. Put our in-depth knowledge of separation equipment and processing to work for you.

Vast experience through large installed base
With an installed global base of more than 55,000 solid/liquid separation solutions and systems, you can imagine that we take service seriously. Wherever these customers are located, we work very closely with them to maximize uptime and boost efficiency.

Well-known OEM brands
Some customers know us as the people with ANDRITZ SEPARATION on our overalls. Others have come to understand that we are the OEM behind former brand names like Netzsch Filtration, 3Sys Technologies, Bird, KHD Humboldt Wedag, Rittershaus & Blecher, Guinard, Lenser, KMPT, Escher Wyss, Royal GMF Gouda, Frautech, Vandenbroek and Sprout Bauer, companies who all have been acquired by ANDRITZ. But frankly, we are capable of servicing and supplying spare parts for nearly all brands of solid/liquid separation equipment on the market.

Local support backed by global expertise
Our service philosophy is simple: One phone call, one contact person, one dedicated team that speaks your language and knows your equipment and process. This is not an empty promise. It is backed by a network of 550 service specialists for solid/liquid separation equipment and systems as well as service centers all around the world.

A true full-service provider
Whether you need spare parts, rentals, local service, repairs, upgrades, or modernization of your equipment, ANDRITZ SEPARATION is a 360-degree service partner. From initial consulting through to service agreements, plant optimization, automation, and training programs, we are always looking for ways to minimize downtime and increase predictability in operations while raising your overall production efficiency. In short, we’ve got you covered.
Now you’ve seen how ANDRITZ SEPARATION can improve your separations process: More than 2,000 solid/liquid separation experts and a range of reliable, innovative systems, all backed by a 150-year track record.

In addition, we can provide solutions for other organic and inorganic fertilizers, like potassium sulfate, phosphates, potassium nitrate, ammonium sulfate, urea, and more.

Let’s sit down and see how our separation expertise can contribute to your success. To find out more, please contact us today.

www.andritz.com/separation