ALUMICHEM
Your partner in water treatment

CASE STORY

WASTEWATER SOLUTION FOR INDUSTRIAL LAUNDRIES

The green transition brings new pollution challenges, as heavy metals from battery factory work clothes enter wastewater. Alumichem helps industrial laundries meet strict sustainability standards and reduce costs.

As demand for electric vehicles grows, battery factories are on the rise, including two new gigafactories in Germany. However, battery production releases heavy metals like lithium and cadmium, which accumulate on workers' clothes, mats, and mops. If not properly treated, these metals enter wastewater during laundering. A Danish solution now enables laundries to safely remove toxic substances like cadmium, nickel, and microplastics, allowing water to be reused or safely released.

Tailored Purification

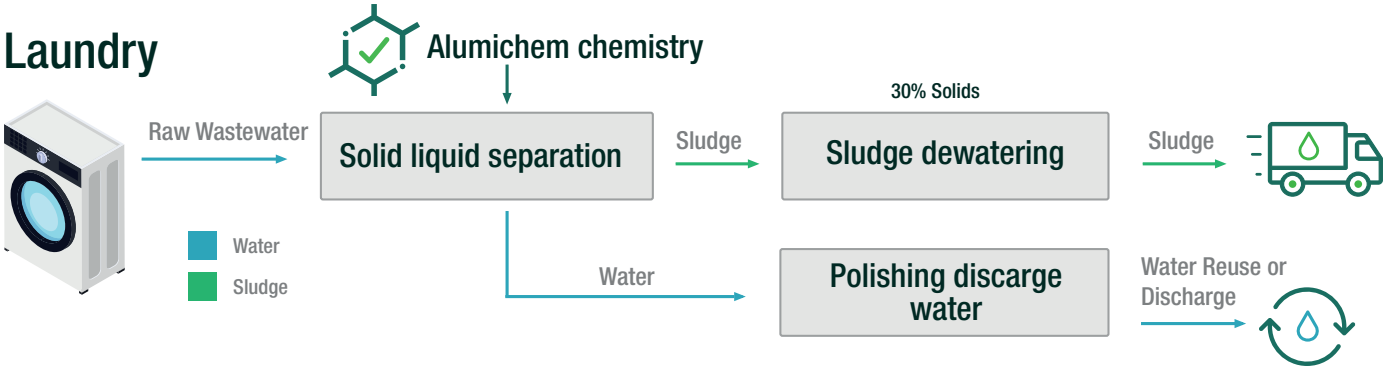
Senior Fellow at Alumichem, Michael Bo Jensen, has spent the last 15 years focusing on wastewater treatment from industrial laundries across Europe, a market where Alumichem now has a significant group of customers, such as the former Berendsen Textil Service, now French-owned Elis. Recently, they also secured a new agreement with the German company CWS Hygiene International Gmbh: "At Alumichem, we help an industry that is increasingly taking ownership of water discharge and the sludge that comes with production," says Michael Bo Jensen, specializing in wastewater treatment from laundries.

Sustainable Heavy Metal Washing

"We examine the customer's wastewater and then assemble systems, technology, and chemicals to ensure that the water is purified. At the same time, we can omit parts of the technology and chemicals if the customer, for example, does not have a challenge with a specific heavy metal," says Michael Bo Jensen, who has noticed an increased focus on sustainability: "Customers are asking for laundries that can deliver green numbers, so they can prove they've made an effort to create more sustainable production," Michael Bo Jensen explains. From a societal perspective, it's very positive that the industry is taking more responsibility: If wastewater from, for example, battery production is not properly purified, it can lead to water pollution that affects both human health and the environment.

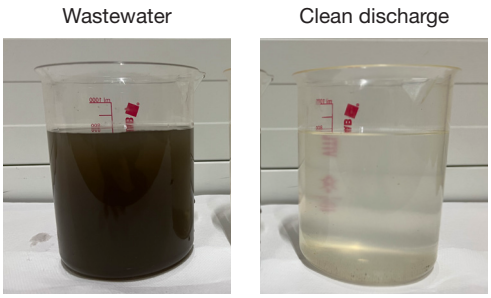
> *"Now we have the most efficient and highly automated wastewater solution in the laundry sector,"*
>
> **- Jakob Penkert, CWS Hygiene**

"The work clothes and mats from battery factories are filled with oils and organic material. You can't just release that into nature," says Michael Bo Jensen about the darker side of the increased production of batteries for electric vehicles.



"Today, we can recycle more wastewater, saving energy and reducing CO_2 emissions, making the solution greener. Plus, reusing purified water has significantly lowered our freshwater consumption."

- Jakob Penkert, CWS Hygiene



CWS Hygiene Success

A large international Hygiene company from Germany, CWS Hygiene, has recently opted for the solution from Alumichem for their industrial laundry:

"We need to efficiently remove heavy metals from, for example, the floor mats we clean, so we can comply with environmental regulations," says Jakob Penkert, who is part of an international Project team from CWS Hygiene International Gmbh, which optimizes their laundries throughout Europe in an energy efficient and resource-saving manner.

Jakob Penkert happily explains why the highly automated and customized solution has become their choice for monitoring and treating wastewater:

"We have previously found that many cheap systems on the market are simply not good enough at cleaning the water. We have now worked with Alumichem as a team to set up our system, and in my opinion, we now have the most efficient and highly automated wastewater solution in the industrial laundry sector," says Jakob Penkert.

And Alumichem's effective technological and chemical solution is not just good for the environment because it captures harmful substances, allowing the laundry service to comply with environmental laws.

The dewatering step thickens sludge to 30% solids, reducing its volume for easier transport.

"Today, we can recycle a much larger amount of our wastewater in the system, so we don't need to heat new water the same way as before. This saves a lot of energy, so we also emit less CO_2. Therefore, the solution is greener when considering the ESG accounts," says Jakob Penkert: "I would also highlight the reuse of purified water instead of fresh water, which - beneficially to the environment - has drastically reduced freshwater consumption."

No Discharge Without Effective Wastewater Treatment

In the EU, wastewater is relatively strictly controlled, and companies like industrial laundries are not allowed to discharge high concentrations of heavy metals into the sewer system, as this would lead to an accumulation of pollution at treatment plants afterward.

Therefore, requirements are placed on the water entering the sewer, and if these are not met, companies risk fines and exclusion. This is explained by Associate Professor Henrik Rasmus Andersen from DTU's Department of Environmental and Resource Engineering, who highlights the importance of companies handling toxic substances responsibly, including both sludge and wastewater from the purification process:

"Since heavy metals cannot be broken down, there's no sensible way to purify them at our municipal treatment plants. Therefore, the solution with this type of wastewater is to identify the source and collect it there, where the heavy metals are separated from the wastewater and the rest of the sludge," explains Henrik Rasmus Andersen from DTU.

THE SOLUTION

- Automated and energy-efficient wastewater treatment system.
- Turnkey solution designed to meet CWS's specific needs.
- Recycling of wastewater, drastically reducing the need for freshwater.
- Meeting and exceeding local government regulations.
- Reduced CO_2 emissions thanks to lower energy demands.
- Support before & after start-up.

ABOUT ALUMICHEM

Alumichem specializes in providing tailored solutions for industrial laundries: Solutions where technology and chemistry work perfectly together to ensure clean wastewater in a time of significant pollution problems and increasing environmental demands.

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SCAN TO READ MORE

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