

Kemira KemiCond[®] – Superior sludge conditioning

Kemira





How to make sludge management less costly?

Sludge management, including dewatering, handling, and disposal, is a major challenge for any waste water treatment plant. Not only is it costly, but it may also cause public objections due to odorous sludge being transported through residential areas.

KemiCond®, an unique patented sludge conditioning process by Kemira, has been developed to improve dewatering, while simultaneously hygienizing the sludge and reducing odor. The result is higher dryness, decreased volume and odor, and lower overall operating and disposal costs.

Depending on the process and equipment you have, KemiCond can in many cases achieve 40% or more in dry solids content, while reducing sludge volume by 50%. This translates into very significant disposal cost savings for your operation and your business.

At the same time, KemiCond helps address global environmental considerations for handling sludge in a sustainable manner. Better dewatering means less tons of sludge being moved by fewer trucks. Additionally, sludge hygienization opens up new, more flexible and efficient disposal options to help meet environmental requirements, both for today and tomorrow.

KemiCond meets your financial and environmental requirements

All waste water treatment plant operators face different issues e.g. high disposal costs, odor problems, variation in sludge, capacity bottlenecks or unstable operation. KemiCond was specifically developed to help solve them and has been successfully running at several reference sites since 2006. Here are some of the numerous financial and environmental benefits you can get with KemiCond:

- Better sludge dewatering, making it possible to reach more than 40% dry solid content
- Reduced sludge volume by up to 50%, cutting transport and disposal costs while lessening environmental impact
- Odor reduction, for better relations with neighborhood and community
- Sludge hygienization enabling sustainable handling and new disposal routes
- Increased capacity on your existing sludge dewatering equipment
- Reduction of flocculating polymer consumption by up to 60%
- Improved working conditions and environment for plant operators
- Higher heating value in the sludge



Advanced Sludge Conditioning – Kemira’s Science in Action

Breaking down the water-retaining structures formed in sludge improves dewatering results. The patented KemiCond process applied before dewatering efficiently achieves this by combining the three steps involved: acidification, oxidation and flocculation.

Acidification

Acidification is performed by treating the sludge with sulfuric acid. This causes inorganic salts, such as iron phosphates and calcium carbonates, to dissolve. The dissolution of salts contributes to sludge volume reduction.

Oxidation

Oxidation by hydrogen peroxide facilitates dewatering and re-precipitates the dissolved phosphorus, which prevents it from reaching the recipient waters. Extracellular polymeric substances (EPS) are also oxidized, which improves the dewatering and handling properties of the sludge. In addition, hydrogen peroxide hygienizes the sludge and reduces odor.

Flocculation

Flocculation is the third and final chemical treatment phase, which agglomerates sludge particles to larger flocs so they can be dewatered more easily. The KemiCond treatment can significantly reduce the polymer consumption compared with normal sludge conditioning.



Every plant is different!

In every wastewater treatment plant we visit, we hear this same comment. And rightly so – each plant is different, with specific wastewater characteristics, process conditions and equipment. In spite of these unique operations, a common problem faces all plants: Cost effective and environmentally acceptable disposal of the sludge.

At our reference installations in Sweden and Finland, as well as in numerous full scale trials in other countries, excellent results have been achieved with the KemiCond sludge conditioning solution.





Small footprint, big results

The standard KemiCond unit is supplied in a 40-foot container or, depending on your needs, mounted on skids.

The solution is fully automated and continuous, ensuring smooth operation and minimum labor input. A standard KemiCond unit is designed to treat anything from 2,000 to 12,000 metric tons of sludge dry solids (DS) per year. If you need a higher capacity, the system can be customized to your specific needs.

The components include automated monitoring and dosage control, chemical tanks, reactors, dosing pumps and all other equipment placed along your treatment system, together forming the technical backbone of the process. The KemiCond unit comes complete with connections for sludge, chemicals, electricity, fresh water and wastewater, minimizing on-site installation time and cost.

Interested?

An evaluation of your plant for compatibility with the KemiCond process is very simple. We will send you an assessment questionnaire that takes approximately 30 minutes to complete. Once we get your specific information, we will quickly inform you if your plant is a good candidate for the big overall cost savings that KemiCond can achieve.

To get started, contact us now at kemicond@kemira.com. Or speak with your local Kemira sales representative.

Kemira – your long-term partner for cost-efficient sludge management

When you purchase the KemiCond solution, you will get a total package consisting of process design, engineering and equipment, conditioning chemicals, operator training, maintenance services and the rights to use the patented KemiCond process. This ensures you get the professional partnership and support level that you and your wastewater treatment plant require.

Good neighbors - The Käppala waste water treatment plant handling sludge from 11 communities around Stockholm, situated in the close vicinity of residential areas on Lidingö Island and with only transport route through city of Stockholm, has been operating KemiCond since 2006. In addition to the obvious advantage of reduced odor, Käppala is using KemiCond in combination with dewatering technology from Bucher Unipektin to get dry solids content in the range of 45% while cutting sludge volumes by more than 50%. The reduction of trucks through the city, also giving an economic benefit, has been very significant.





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Kemira in brief

Kemira is a global two billion euro chemicals company that is focused on serving customers in water-intensive industries. The company offers water quality and quantity management that improves customers' energy, water, and raw material efficiency. Kemira's goal is to be a leading water chemistry company.

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