

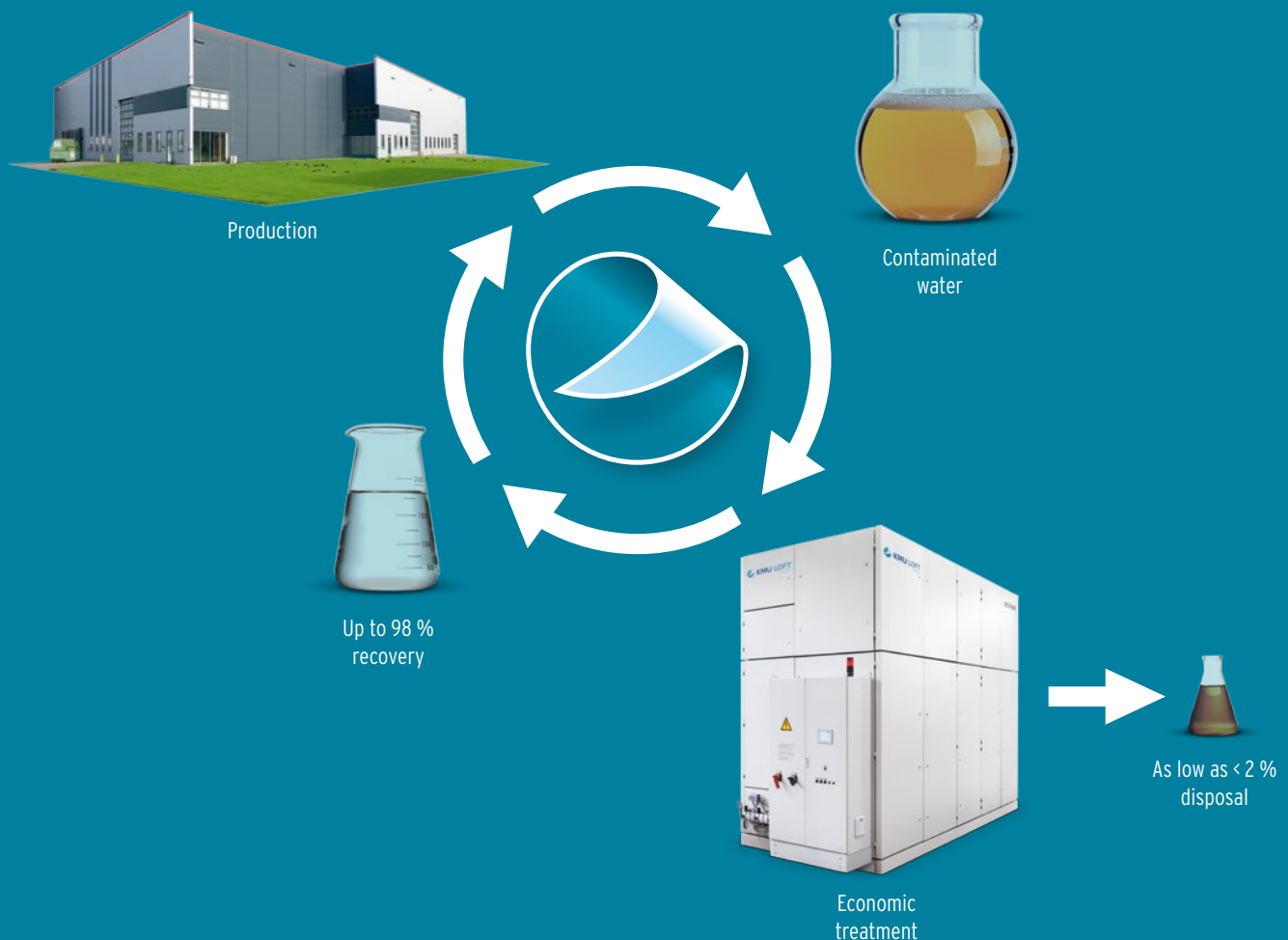


because resources are limited



Innovative solutions  
for resource recovery

# Recycling of Industrial Waste- and Process-Water.







Water is one of the most precious resources of the world and must be sustainably protected. With this motivation, we develop innovating wastewater treatment solutions for our customers.

Sustainable resource management does protect the environment, it helps to work economically and beyond that serves to recover valuable raw materials such as precious metals, oil and above all water for reprocessing.

We therefore, in the interest of ecology and economy, design and realise more efficient solutions for economical and by and large waste water free circuits.

Our innovative solutions, based on our award winning evaporator technology and more than 25 years of development expertise, have made KMU LOFT Cleanwater the leading waste water treatment specialist for industry and trade.

Since the 90s, with approx. 100 employees we have been creating plants and system solutions all over the world to individual customer specifications. As our customer you benefit from the expertise of our engineering team gained in over 2,200 successful projects. Furthermore you can rely on our efficient sales and service network. Our German industrial sites guarantee the highest level of quality and flexibility »Made in Germany«.

Analogue to our motto »avoiding is better than disposing« we render economically long-lasting solutions for reducing waste water amounts.

Using vacuum evaporators not only significantly reduces costs but it also enables the reuse of the recycled distillate and regained raw materials from the concentrate back into the production processes.

Our fully automated waste water plants reduce the workload on your staff and can be easily integrated into existing systems. They optimise your entire Resource-Management with low level energy and chemical consume and thanks to clean-in-place CIP and an easy to service design your maintenance and servicing overheads will also be of a minimum.



# Our system solutions for your resource and cost management.

Disposal cost  
per year in EUR  
for a volume  
of 2,000 m<sup>3</sup>  
of contaminated  
process water.\*





The professional management of wastewater protects the environment and can improve your company's balance sheet.

Sustainable treatment with evaporator technology helps: on the one hand, it avoids the formation of big waste water volumes, and on the other hand the distilled water is led back into the process in the form of a circulation system. Last but not least, the ecological balance of your company will be improved.

Recycling your own waste water unlocks significant savings potentials and based on our experience up to 70 %.

Depending on the technology used and contamination levels of the process water our vacuum evaporator plants have a level of efficiency of up to 98 % reusable water with as little as 2 %

residual concentrate left. In doing so the distillate quality is so high that none or only few follow-up treatment steps are required before it can be reused or released.

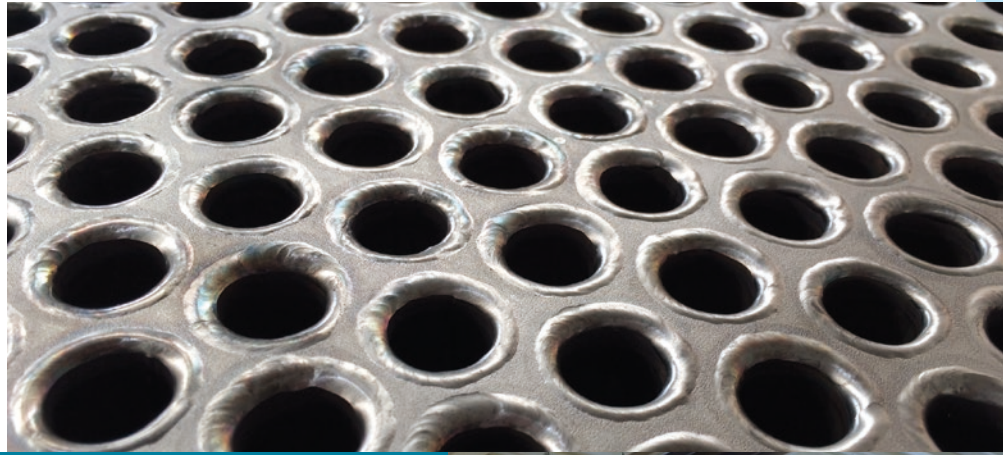
The investment pays itself off swiftly. Depending on the workload, amortisation can take place within as little as a few months but usually, at the latest, within the first two years. After which the plant will earn you a profit. If you currently have to dispose of 2,000 m<sup>3</sup> contaminated process water each year, you can save over 1 million EUR in ten years. Our customers in industrialised countries save at least from 30 up to over 400 EUR for every cubic meter of waste water that they do not need to dispose of.





# How do you extract 98 liter distillate from 100 liter contaminated water?





There are many ways to treat industrial waste waters. Should however, a factory be run waste water-free or require very clean rinse water to be won out of the waste water, then an evaporator is your first choice. The distillate it produces contains almost zero oil, heavy metal or other residues.

Only when extreme high quality requirements or particularly strict environmental standards apply, are additional follow-up treatment steps, e.g. ion exchanger, necessary.

KMU LOFT Cleanwater systems evaporate contaminated water under vacuum and then condense it. The heat energy contained in the distillate is reused to pre-heat the inflowing process water before it even enters the evaporator, making the system especially energy efficient. While a very small amount of evaporation residue (concentrate) is disposed of the distillate is generally recycled back into the process circle without any additional filtration.

The economic savings compared to atmospheric evaporation are impressive: considering operating costs of approx. 5 to 20 EUR at an energy consumption of less than 35 to 70 kWh per cubic meter waste water, this process makes much more sense than the atmospheric evaporation of approx. 800 kWh.

Likewise and also beneficial is the advantage of retrieving valuable raw materials from the



concentrate, e.g. in the silver and gold industry, whilst the amount of chemicals required to do so is considerably lesser.

In general a wastewater treatment plant with a KMU LOFT vacuum evaporator requires fewer personnel resources and handling.

Also in regard to flexibility and process safety our systems score as they automatically adapt to fluctuating process water qualities and with the aid of the up-to-date maintenance and process visualization, in availability and operation.

KMU LOFT - From compact trough modular to complex.

What our compact  
evaporators can do  
- can be done on a  
large scale too.







Our highly-developed and practically tested vacuum evaporators PROWADDEST®, DESTIMAT® and ECO set high standards in water treatment. In the compact version our customers are offered a low cost alternative for treatment of industrial waste waters with a throughput of 25 to 5,000 l/h.

However, as industrial production processes become ever more complex our know-how is not only wanted for defining the optimum set up of the evaporator itself, but also for realisation of larger waste water treatment plants with a variety of different components.



Based on years of practical experience in the most diverse branches and industries we are your competent partner for complete solutions, from the single evaporator to the very complex plants.

In addition, we take up the customer- and application-specific requirements and on this basis together we develop the optimal solution for volume, energy efficiency, integration and system controls. This is the case for the whole process and value creation chain.

In a preparatory stage, our customers offer support with tests in our development laboratory in order to achieve the most real conditions possible. Ideally, we execute pilot-plant testing in site and assure to meet all requirements, from the concentration through the distilled quality to the energy consumption.



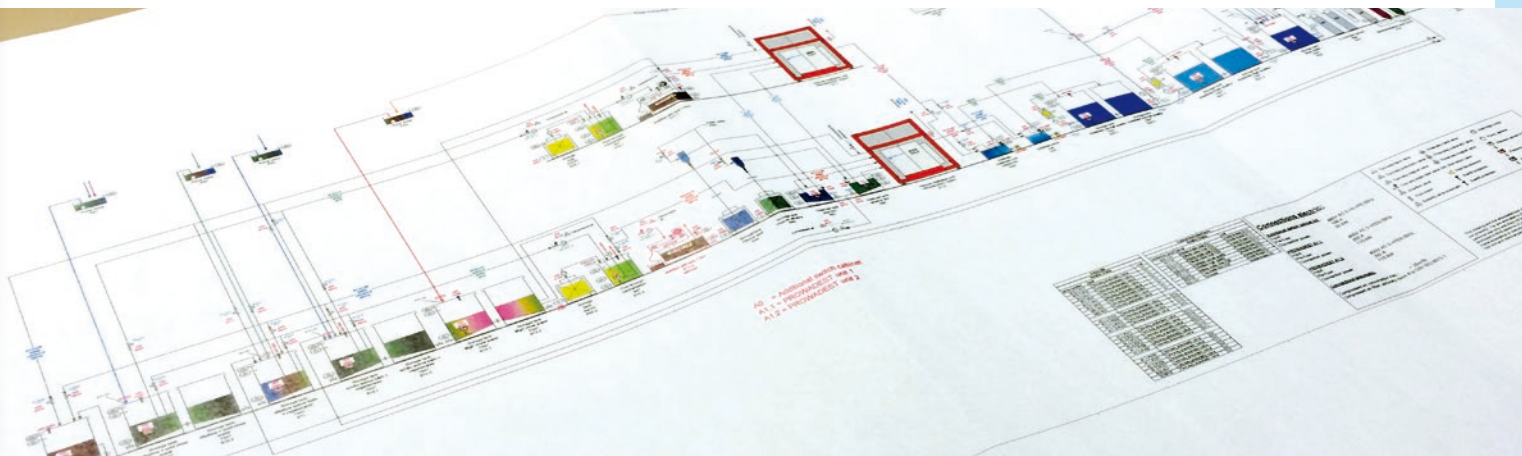
DESTIMAT® Pilot Plant

KMU LOFT - Lifetime Partnership.

The only thing that  
counts: the results  
you are getting.







From the analysis, counseling, professional project management through on-site assembly and commissioning to the service; K&U LOFT Cleanwater houses all professional skills together combined.

The merger of the two renowned companies-K&U Umweltschutz GmbH, Hausen and LOFT Anlagenbau und Beratung GmbH, Kirchentellinsfurt-put us into an ideal position to offer you a full portfolio of expert solutions and innovative development know how. Our extensive range of products and services reflects our philosophy: we are committed to offering you the best sustainable solution possible.



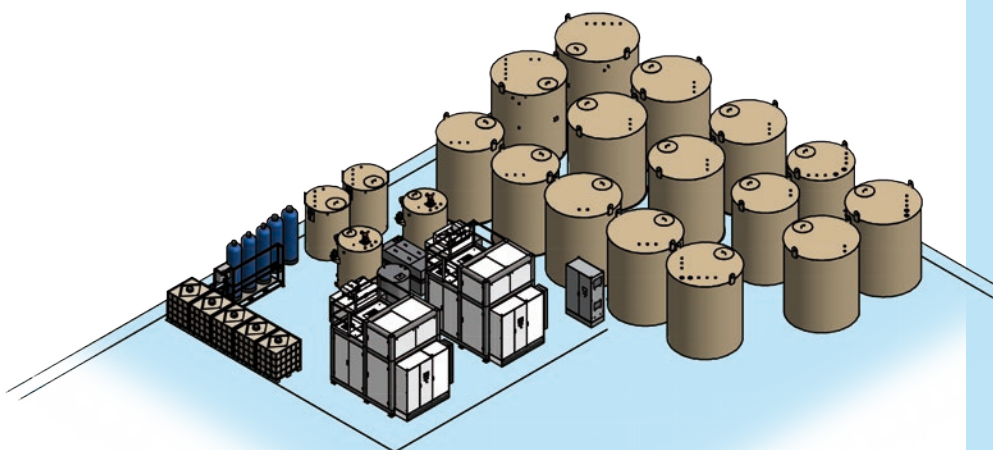
Our vacuum evaporator portfolio includes DESTIMAT® natural circulation systems, forced circulation systems PROWADDEST®, and the compact ECO series of natural circulation evaporators.

With the expertise of over 2,200 successful installations and expert plant and technology know how we are in the position to recommend the perfect solution for your application.

DESTIMAT® systems feature the special benefit of not requiring additional heaters or pumps, what considerably reduces their energy consumption. For heavily foaming media, long running times or short start up times we recommend the PROWADDEST® series. Finally the ECO series combines compactness and high performance.

Independently from the preferred technology and from the requirements to the preparatory

and follow-up treatment during the planning we explicitly refer to the specific process waste water of our customers. Within the scope of customised designed process technology our project managers draft process (R&I) charts accompanied with CAD layout plans for the plant concerned. Ultimately, a precise planning ensures a perfectly adapted and cost optimized operation.



3D plant layout



KMU LOFT - More value from a single source.

Whoever listens  
carefully – can offer  
the better solution.





Distillates from vacuum evaporators are virtually free of hardeners, salts and heavy metals and as far as conductivity is concerned, generally manifold times better than that of tap water. By integrating perfectly matched pre- and follow up treatment units into the overall system we can achieve even further quality improvements.

With the same dedication we're continuously expanding our service and support services. Whether before, during or after plant installation, KMU LOFT Cleanwater will support you suitably and fairly as to make sure that you can concentrate on what really matters: the success of your core business.

PROWADEST® 2500/1

KMU LOFT Cleanwater offers on hand a wide range of pre- and follow up-treatment procedures such as to neutralize, to decontaminate, to deoil, to filter or to separate sludge. Ideally attuned to our evaporators these treatment units are either built within the machine - for example BEST DEST for ultimate distillate quality in oil separation - or set up externally.

In conjunction with our sister company **NOWAK Cleanwater** we offer in addition chemo-physical procedures for decontaminating, neutralizing or separating toxic materials (e.g. cyanide and CR6 or ammonium) which cannot be fully decomposed by evaporation. NOWAK precipitation and flocculation systems convert critical substances into a filterable form before evaporation.

More information at: [www.nowak-cleanwater.de](http://www.nowak-cleanwater.de)

KMU LOFT Cleanwater offers also low-temperature evaporators for treating temperature-sensitive and corrosive liquids.

KMU LOFT Cleanwater systems are engineered for 24/7 operation. Notification of maintenance work such as compressor oil changes or motor bearing lubrication is carried out automatically und software updates are easily installed. Furthermore, our training team can teach safe plant operation in just a few hours. All this minimises system down times. In the rare case of a problem, our technicians are right at your side: via hotline, email, remote maintenance or in person on-site.

This also includes when ordering

spare parts and chemical products for cleaning and foam reduction systems, customers can rely on our expertise and fast delivery.



DESTIMAT® LE 3000



KMU LOFT - Entirely your world.

We work out  
the right process  
solution for you.



Disposal management



Surface coating



Power engineering



Whether in packaging, pharmaceutical, power engineering, surface coating or wash and rinsing processes-KMU LOFT Cleanwater evaporators have proved themselves in all these fields of industry with new ones being added. It is to the interest of all to recycle and reuse contaminated process water.

Typical applications for our water treatment plants are chemical processing, electroplating, metal processing, pressure casting, as well as all kinds of rinsing and cleaning processes. Your application is not mentioned? Please call us. We will be happy to discuss the possibilities that you may have.

Our vacuum evaporators are versatile - and it is not unusual that completely new ideas develop from discussions held between known customers or other interested parties. From experience it is this feedback that drives our development work on and success proves us right: 80 % of all our orders come from recommendations and follow up business.

KMU LOFT Cleanwater evaporators are at work in all fields of industry where waste waters from production and processing must be handled efficiently. Of no coincidence since with each project we develop together with our customers, for our customers.

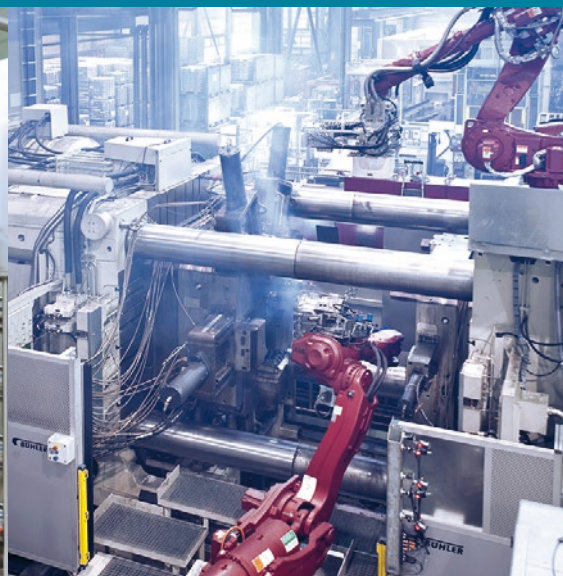
We invite you to challenge us. We understand your core business and knowing the entire range of technological possibilities we can give you that competitive edge in your industry. In conjunction with all the advantages of perfect customised solutions, your company is ensured a maximum of investment security.



Metal working



Chemical & Pharmaceutical



Foundry

Ask us for our plant engineering expertise and references in the treatment of:

- emulsions  
(cooling or lubricating agents)
- release agents  
(aluminum casting, autoclave)
- wash waste water from part cleaning
- rinsing and active baths, painting pretreatment
- regenerate from VE plants
- sanding and polishing waters
- concentrate from micro and ultra filtration
- electroplating, sanding and hardening waste waters
- radioactively contaminated waste water
- landfill leachate
- color waste water
- rinsing water from crack detection systems



because resources are limited

**KMU LOFT Cleanwater GmbH**

Bahnhofstraße 30

72138 Kirchentellinsfurt

Germany

[info@kmu-loft.de](mailto:info@kmu-loft.de)

[www.kmu-loft.de](http://www.kmu-loft.de)

