Test Center Excellence at GEA PE France (Kestner)

Turn your smart idea into business success

engineering for a better world

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GEA Test Center (Kestner) Evaporation and Crystallization

Validate your industrial projects. GEA is ready to serve your development!

Test out your ideas

Market requirements are becoming increasingly demanding, and the industry is challenged to propose specific, innovative solutions tailored to the needs of the market. GEA's mission is to meet the needs of our customers. Whether you want to change or develop your processes, improve your performance, test out a new product or a new innovation, carry out small-scale production or upcycle a by-product, GEA can take care of your project from A to Z.

GEA Process Engineering France (Kestner), one of GEA's Center of Competence in Evaporation and Crystallization, has more than 1,000 m² of test area located in Montigny-le-Bretonneux (west of Paris, France).
GEA can validate a comprehensive solution for your evaporation and crystallization process including scrubbing and stripping, chemical reactions or precipitations, membrane pretreatment, solid liquid separation, drying and calcination.

Our areas of application

We are able to host projects from chemical to food industries.
Our tests are subject to a few conditions:

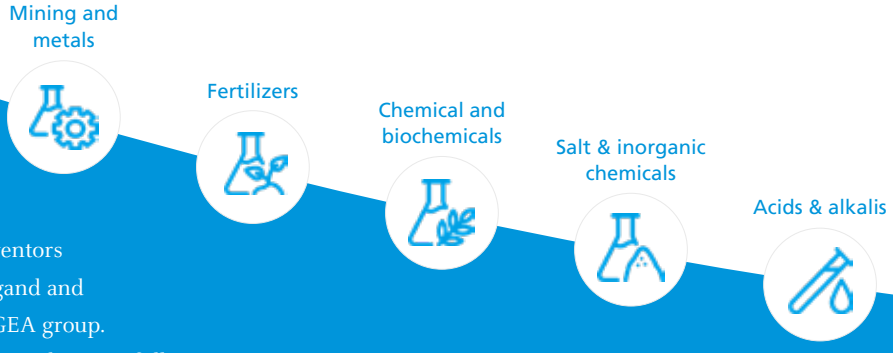
- Tests on mutagens or carcinogens are not accepted (category 1 and 2).
- A validation study is necessarily carried out in advance of a test involving ATEX (explosive atmosphere) products.
- Radioactive products will be replaced by representative, synthetic and non-radioactive solutions.

What GEA can offer for you

- 120 years' experience and documentary archives
- Strict confidentiality regarding projects
- A committed team of experts dedicated to each application
- Assistance in upcycling by-products
- Expertise in validating process parameters
- Ability to reproduce a complete production line on a semi-industrial scale
- Ability to perform tests on customer pilots on our premises
- Continuous 24-hour pilot testing, up to 5 days/week
- Provision of a graphite pilot for highly corrosive solutions
- Ability to perform small-scale production

Pilot plants

- Stainless steel mobile falling film evaporator
- Stainless steel forced circulation evaporator/crystallizer
- Graphite forced circulation/falling film evaporator
- Corrosion resistant stripping column
- Draft tube crystallizer
- Pressure crystallizer (up to 5 bar a)
- Glass and tantalum falling film evaporator
- Basket centrifuge
- Fluidized bed dryer
- Reactor
- Storage and intermediate tanks
- Possibility to include : centrifugal decanter, press-filter, membrane filtration; etc.



Almost all evaporation and crystallization competence from well known technology inventors like Kestner, Messo (Messing & Sowen), Wiegand and Laguilharre, are nowadays embedded in the GEA group.
Every year, 30 new products or mixtures are tested successfully and 50% of the pilot tests are converted into industrial units.

The laboratory

The laboratory is the first step of any test. It allows to:

- Test out the behavior of a product at all stages of the process: foaming, precipitation, color change, stability, degassing
- Check the feasibility of the operation batchwise at 2 to 5 l scale
- Make a precise mass balance and determine the physical properties of a product at each stage of the experiment: boiling point elevation (BPE), density, viscosity, surface tension, pH, particle size distribution, etc.
- Measure vapor-liquid-equilibrium
- Optimize the cost of the industrial unit by selecting the most suitable processes
- Validate the most suitable construction material thanks to corrosion tests > 1000 hours under vacuum or under pressure (autoclave).
- Analytical instruments: titrator, Karl Fisher, viscometer, densimeter, oven, pressure meter

Usually 10 to 20 liters of your product are required to carry out our tests, alternatively synthetic solutions can be used.
For consistency, it is recommended that chemical analysis are performed by our client, but they can also be handled by us.

The pilot hall

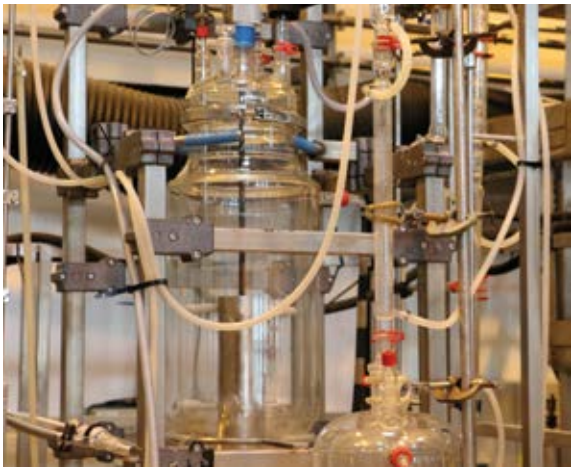
Pilot units are important to validate an industrial process and guarantee the specifications of the end product.
Every year, our highly trained team successfully carries out several continuous tests (24 hours a day), according to the appropriate safety standards (OHSAS 18001*). The amount of the product treated can vary from a few kilograms to several tonnes.

Further equipment like a steam boiler, 2 vacuum systems, a hot water circuit, compressed air, a cold water circuit and a refrigerated storage system (cold room) is available.

The tests can also take place with our mobile unit at your site if the product cannot be transported.

Bench scale testing with

Bench scale testing



Draft Tube Crystallizer with feed and discharge tank

Mobile stainless steel falling film evaporator

engineering for
a better world

We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

"Engineering for a better world" is the driving and energizing principle connecting GEA's workforce. As one of the largest systems suppliers, GEA makes an important contribution to a sustainable future with its solutions and services, particularly in the food, beverage and pharmaceutical sectors. Across the globe, GEA's plants, processes and components contribute significantly to the reduction of CO_2 emissions, plastic use as well as food waste in production.

GEA is listed on the German MDAX and the STOXX® Europe 600 Index and also included in the DAX 50 ESG and MSCI Global Sustainability indexes.

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