



In-depth knowledge that sets new standards

Alfa Laval's Materials Technology & Chemistry Lab and Test Centre



Expertise to solve challenges and take technology further

Alfa Laval is deeply committed to continuously improving our heat exchangers and finding new solutions for customer processes. At our Materials Technology & Chemistry (MT&C) Lab and Test Centre located in Lund, Sweden, we can offer unique competence in areas that include metals, polymers, chemical analysis and much, much more.

MT&C Lab

Alfa Laval stands apart from other suppliers of plate heat exchangers, with an in-house laboratory dedicated to materials science. Here, industry-leading specialists develop and test new materials for our heat exchangers, work with customers to find the optimal materials for their specific processes, as well as assist in troubleshooting long after equipment has been installed.

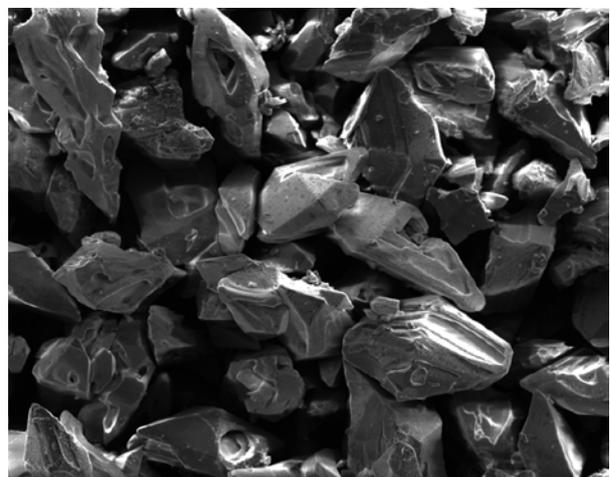
For plate heat exchangers

Every component of an Alfa Laval heat exchanger undergoes extensive testing to ensure that it fulfils our own specifications as well as all legislations, directives and demands of the relevant target applications. But this is just the start. We push our equipment to the limits, through long-term testing procedures at extreme temperatures and pressures. This allows us to gain even greater knowledge, which is fed back in to our product development.



Molded samples with a mirrorlike surface for metallographic examination in a light optic microscope.

A scanning electron microscope with energy dispersive spectroscopy makes it possible to identify the composition of plate fouling, a necessary step for developing the appropriate cleaning strategy. In this example, we see fouling consisting of hydrocarbons, sulfides and sulfur oxide.



How we work

Our MT&C Lab and Test Centre are deeply involved at every stage of the heat exchanger lifecycle: from offering expertise in R&D, purchasing and production, to providing customers with support during the sales process and once the equipment is up and running. Along the way, the knowledge we acquire is reinvested across the Alfa Laval organization to ensure that we continuously improve process performance.



Research & Development

The MT&C team plays a critical role in the development of new Alfa Laval heat exchangers. Our technicians work on the conceptual development of new material technology and evaluate existing metals and polymers, while also contributing to manufacturing design and technology.

Purchasing

In the purchasing phase, our MT&C Lab and Test Centre perform technical audits, provide compliance support and material qualification, work with suppliers on development, and conduct first production sample testing.

Manufacturing

Our materials scientists provide process support during production, in addition to performing a wide range of tests. Among other things, we check for material non-conformities and conduct failure investigations when necessary.

Marketing and Sales

Our chief aim is to always make sure customers have the ideal technology for their application and media. Our experts can offer advice on selection for gasket and plate materials, chemical products, and paint systems, as well as tips for corrosion prevention during the equipment lifetime.

After Sales

Once an Alfa Laval heat exchanger has been installed, our technicians support customers with training and advice on selecting the right chemical products and solutions for cleaning-in-place. We can also provide further application-media testing for investigations when processes do not go as expected.

Access to leading specialists

Our lab team possesses unique expertise into the polymers and metals that go into our equipment, as well as how these materials interact chemically with customer media. In addition to their work at Alfa Laval, these specialists are known for their contributions to scientific conferences, at leading research institutes and universities, and in academic publications.

The right polymer for process perfection

Rubbers used in Alfa Laval gaskets undergo lengthy qualification testing to ensure reliable sealing performance under a range of temperature and pressure conditions. Thanks to an extensive gasket material portfolio and decades of experience, Alfa Laval polymer experts can help customers select the gasket with the optimal properties for their target application.



Advanced chemistry to minimize fouling

Depending on the duties in which they are used, plate heat exchangers can encounter many different types of fouling. The MT&C Lab offers chemical analysis to better understand how and why fouling has occurred. Our specialists work with customers to develop the ideal cleaning procedure to fit the application.



Identifying issues at the microscopic level

Fractures in the surface of a plate can occur for different reasons, and every type of fracture has its own unique appearance and characteristics. By using a powerful scanning electron microscope, the metallic materials specialists at Alfa Laval can identify the causes of a crack and advise customers on the best ways to avoid these issues in the future.

A new standard of materials support

Our MT&C Lab and Test Centre in Lund, Sweden offer a variety of services to help customers throughout every stage of the product lifecycle. Our in-house capabilities cover a range of competence areas, including:

Mechanical investigations

- Tensile testing
- Hardness testing
- Compression testing
- Fatigue testing
- Impact testing

Advanced imaging

- Metallography
- Fractography
- Particle size and distribution

Chemical analyses

- Chemical composition
- Corrosion testing
- Physical properties
- Solubility
- Compatibility

Surface Characterization

- Surface roughness
- Wettability
- Surface energy

To find out more about our detailed offering, speak to your local Alfa Laval representative or fill out the contact form at www.alfalaval.com/demand-new-standards/



Fatigue is a phenomenon that occurs due to fluctuating tensile stress caused by vibrations or pulsating pressures. A failure investigation can confirm fatigue based on the characteristics of the crack.

Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuff, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information direct.

