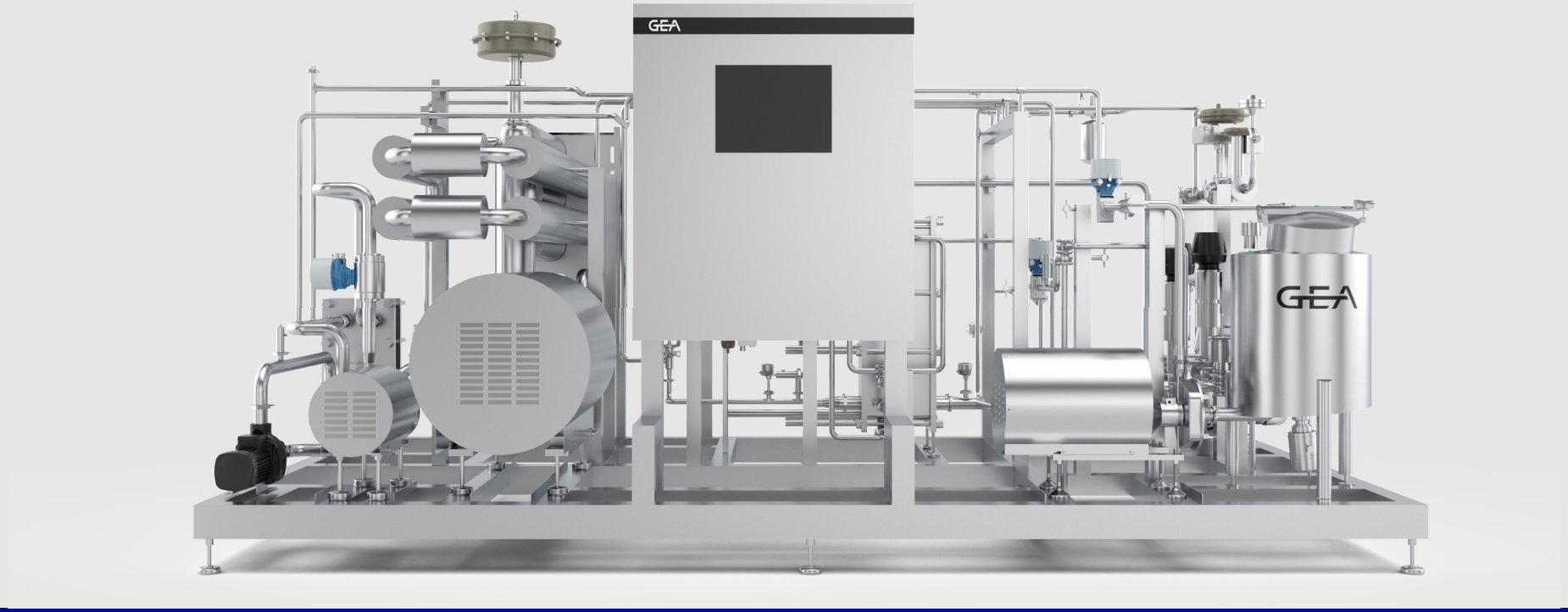


GEA MICRO FORMULA®

The GEA MICRO FORMULA® units are easy to operate and come as standardized modules, in different sizes to match your capacity requirements. The system is state-of-the-art for enabling sustainable, highly reproducible, and high-quality microparticulation of whey proteins.

Pilot units for initial testing

We want you to be confident that our technologies will fit in with your processes and generate high-quality products. But because we don't expect you to just take our word for it, we offer the GEA MICRO FORMULA® pilot units for rental. This gives you the opportunity to test the microparticulation technology with your raw materials on site, as part of a complete process. Carrying out tests at your own facility means you don't have to consider any negative effects that transporting raw materials to another test site might have on the process, which could compromise test results. You can assess our equipment alongside existing equipment, such as ultrafiltration systems for membrane filtration, and with your product packaging preferences, so you can see how your complete production line functions and evaluate the final product.

GENERATE PRODUCTS WITH HIGH VISCOSITY

A highly efficient, reproducible microparticulation technology that can help you to increase your yield of high-quality whey protein concentrates, while reducing CAPEX, OPEX, service and maintenance costs

GEA MICRO FORMULA® for precisely defined whey protein particles

The global dairy industry uses microparticulation technology to further process whey protein concentrates (WPCs) that are generated using ultrafiltration technology into microparticulated liquid and powder WPCs that display precisely defined particle sizes and functional properties.

Microparticulation combines heat to denature the protein, with a controlled mechanical treatment that results in the formation of a very exact protein particle size.

Microparticulated whey proteins can be used as natural liquid stabilizers, and can also make ideal substitutes for proteins and fats in a variety of diary foods, including cheeses, ice creams, yogurt, sauces and dressings, and mayonnaise.

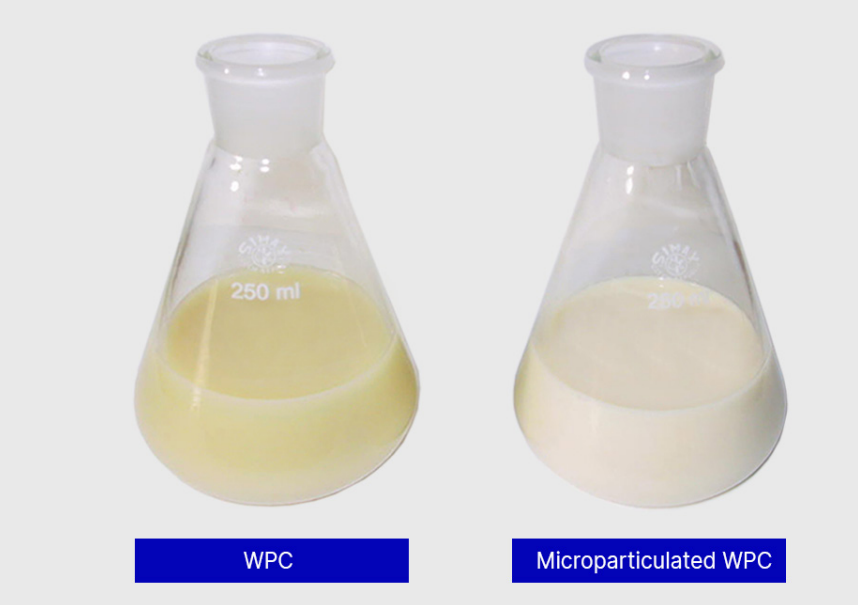
The GEA MICRO FORMULA® technology offers unique features, such as our proprietary temperature, time, shear (TTS) unit, which utilizes only standard flow components, set up in a special configuration. Available in different sizes to match your capacity requirements, the units enable complete control of protein denaturation, particle size and distribution and, most importantly, functionality of the resulting microparticulated WPCs.

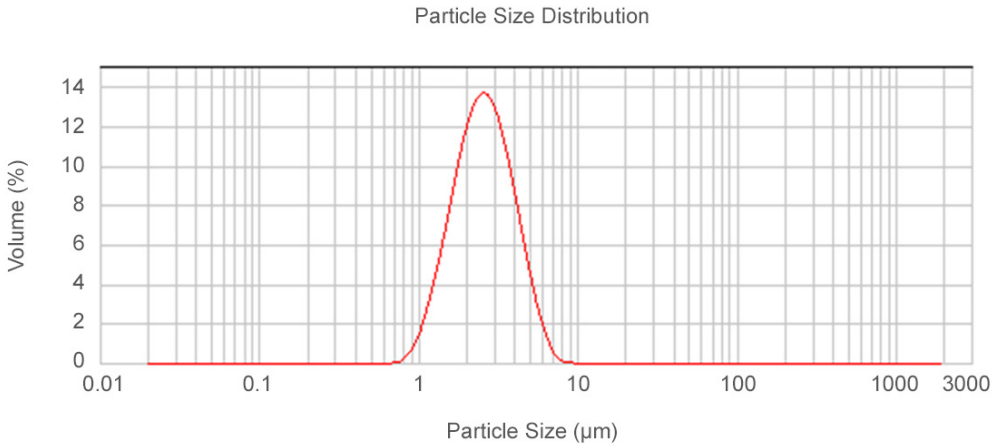
The MICRO FORMULA® unit is easy to operate, and is relatively low cost to maintain. The simplified process, combined with long run times between clean-in-place (CIP) cycles helps to reduce both operating costs, and the use of water and chemicals for cleaning.

All of our GEA pilot units can be shipped globally, and we can even send our GEA experts to work with you, if you'd like that extra support.

Our GEA MICRO FORMULA® system offers a technology for formulating microparticulated whey protein concentrates (WPC) that display excellent functional characteristics, from highly reproducible emulsification and improved water binding, to optimized stabilizing properties, high interactivity with dairy and food matrixes, and a highly reproducible particle size of 1-10 µm. Using GEA MICRO FORMULA® will help you to generate products with high viscosity - similar to that of cream or drinking yogurts - great mouthfeel, and desired near-white color.

Microparticulation is ideal for generating whey products that can replace fat or milk protein in a wide variety of dairy and food applications. These whey proteins aren't just inactive ingredients, their functional properties can improve the properties and yield of the final food product, and result in a great taste and texture.





Our technology, for making your whey.

For example, microparticulated WPC is commonly used to replace fats, generating lower-fat, great tasting products. These include:

- Most cheese types (also yield increase)
- Ice cream
- Yoghurt and milk desserts
- Dressing and sauces
- Mayonnaise and fat emulsions
- Other fat containing food products

Engineering for a better world.

GEA.com

GEA Liquid Technologies A/S
Noerskovvej 1B,
8660 Skanderborg
Denmark
Tel: +45 7015 2200

gea.com/contact
gea.com/membranefiltration

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