

Scale-up of chemical processes

Outsourcing of the industrialization of a chemical process in a pilot plant



In the [fine chemicals and pharmaceutical industries](#), the laboratory to semi-industrial scale-up phase is a critical stage. Its success will determine the viability of the new product's development process under the quality criteria required by the client.

Performing or optimizing a scale-up process may involve the use of new production techniques or separation technologies. Outsourcing this stage of the development will also allow companies to use highly specialized facilities and human resources to strengthen their internal development capabilities.

Our solution

Applus+ Laboratories offers chemical process scale-up and optimization services for future industrial-scale production. Our staff has over 20 years' experience in high complexity chemical process scale-ups. Our service includes:

- Reproducing the transferred synthetic route
- Laboratory scale optimization of the yield and/or selectivity. Safety parameter evaluation
- Transferring the process to the pilot plant to evaluate behavior during scale-up
- Implementing the improvements needed to ensure scalability
- Possible creation of mixed teams (clients/Applus+) to develop the project in Applus+ facilities

Our expertise and our facilities allow us to participate in all the stages of the development of chemical processes:

- Fine chemistry process development



- Scale-up of chemical processes
- Analytical methods development and validation
- Production under GMP

Versatile facilities to test or validate new production schemes:

- Pilot plant operating under GMP with a reactive capacity of more than 3.6 m³
- Reactors made of different materials (Hastelloy, stainless steel, vitrified)
- Working temperature range from -80 °C to 200 °C
- High pressure plant up to 100 bar with volumes between 0.5 liters and 50 liters
- Solid-liquid separations (Nucha filters, centrifuges, etc.)
- Clarification equipment (Cuno filter cartridges, sparkler filters, etc.)
- Drying equipment (horizontal, vertical, spray and other dryers)

Applus+ Laboratories has worked for over 15 years with companies in the fine chemicals, pharmaceutical and biotechnology industries offering services from the research stage to the product marketing stage. We work under global reference standards (FDA and EMEA). We apply the highest criteria of confidentiality.

Benefits

- Access to versatile facilities and experts in highly complex processes
- Expand the product portfolio quickly and reliably
- Process optimization (savings in raw materials and/or waste destruction)