Resins manufacturing plants
Optimize and improve your performance

Resins manufacturing plants designed and supplied by Cellier Activity of ABB France are technically based on high-yield reactors and a fine process control system. Our comprehensive service offer includes design and engineering, procurement, turnkey realisation and commissioning.

Application
ABB designs and supplies high-performing resin plants for the production of a wide range of solvent-based or water-based emulsions or resins used in the manufacturing of paints and coatings:

- Alkyd resins
- Polyester resins
- Acrylic resins
- Vinyl / Acrylic emulsions
- Phenolic / Formaldehyde plants
- Multipurpose resin units

Performance
This best performance is offered in terms of productivity and energy efficiency:

Batch time reduction up to 30%
A fine control of the reactor and manufacturing process, particularly for polyester resins, enables the reduction of the production time and the increase of the reaction yield.

Increased productivity and energy efficiency
By improved thermal exchanges and better control of temperature regulation at the top of the packed column.
ABB offers innovative solutions to increase your plant performance:

- heating and cooling by heat transfer fluid,
- weighing, dosing of components,
- powder handling, transfer and dosing,
- process control, automation and monitoring,
- computer management of formulae and recipes as well as production parameters,
- design of the main vessels (reactor, packed column, mixer...),
- finished product filtration via a pressure in-line filter,
- liquid transfer by pipe pigging.

**Heating and Cooling**
The key to the process control, productivity and quality lies in:

- the mastering of thermal exchange systems,
- the accurate temperature regulation with 1°C accuracy (cascade regulation) which allows a fine control of the reaction and product quality,
- the design of the mixing tool for an efficient thermal exchange.

**Reactors**
- Installed on load cells.
- In-line viscometer.
- Special treatment of internal reactor wall for an easy cleaning (optional).
- Heated and cooled by thermal oil circulating through limpet coil welded on the external shell or through pipe coil inside the tank (according to the application).
- Motor unit with frequency inverters to save energy.
- Supply of peripheral equipment: distillation system, dilution tank, powder hopper, etc.

**Automation and control system**
The control system and supervision software developed by ABB allows:

- real-time production monitoring,
- temperature control through algorithms adapted to the different product types and process phases,
- anticipation of critical stages (in-line viscosity measurement),
- safe and automated operations,
- complete traceability,
- management with database of formulae, recipes, raw materials, process parameters.

**Powder handling**
Solutions such as pneumatic transfer systems, silos with extracting systems, conveying screws, metering hoppers, etc. ensure:

- dosing accuracy
- compliance with safety, health and environment standards,
- ergonomics,
- operation reliability.

**Liquid transfer through pigged lines**
The pigging of pipes, either used for the transfer of liquid raw materials or finished products, enables:

- product transfer and change without cross-contamination
- maximum process flexibility for just-in-time operations,
- reduction of product loss and recovery of effluents,
- safe transfers in closed system.
Engineering and services
- Audits of existing plants
- Basic engineering
- General mechanical and electrical studies
- Automation and control system
- Procurement, preassembly and quality control
- Installation on site, erection of turnkey plants
- Commissioning and start-up
- After-sales services and training
- Maintenance and spare parts
- Modernisation of existing plants

Main references
- Akzo Nobel
- Arkema
- Asian Paints
- Ciba
- Chryso
- Consortium Marocain
- Daihan Automotive Coatings
- Elf Atochem (Cray Valley)
- Gattefosse
- NIR (National Industrial Resin)
- MPC Prokim
- Rohm & Haas
- Scott Bader
- SICPA
- Valspar

Resins manufacturing plants | Technological solutions directly mastered by ABB 3
For more than forty years, Cellier, as an Activity of ABB France, Division Process Automation, has been a process engineering company supplying turnkey production units worldwide. Cellier designs, engineers, assembles and starts up complete automated installations for the paper, lubricant, paint and specialty chemical industries. Cellier has acquired know-how in the various processes and techniques used by its industrial partners for the formulation of liquids and powders:

- receipt and storage of raw materials,
- transfer, dosing,
- dispersion, reaction, mixing (batch and in-line),
- filtration,
- pipe pigging,
- packaging and palletizing,
- treatment and recycling of waste,
- automation and control systems.

We take care of your project and ensure the audit, the training of users, the after-sale service up to the complete maintenance of your plant.

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