
Resin Manufacturing Units

Optimize and improve your performance



Cellier Activity of ABB France is specialized in the design and supply of synthetic resin manufacturing units. Its expertise and offerings include process design, basic and detail engineering, supply of process equipment, supply of complete automation system, site services such as erection supervision, commissioning and start-up.



Process engineering and services

— 01 ABB reliable resin reactor
— 02 Skidded modules forming part of the
— 03 Resin modular production unit

Application

ABB design and supply resin plants for the production of a wide range of solvent-based or water-based emulsions or resins used in the manufacturing of paints, coatings and adhesives:

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

01



Main references

- Akzo Nobel
- Arkema
- Asian Paints
- Blanchon
- Capital Resin Corporation
- Ciba
- Chryso
- Consortium Marocain
- Noroo Automotive Coatings
- Elf Atochem (Cray Valley)
- Gattefosse
- NIR (National Industrial Resin)
- MPC Prokim
- Obegi Chemicals
- Scott Bader
- SICPA
- Valspar

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The best performance is offered in terms of productivity, energy and cleaning efficiency.



Batch cycle time reduction

A fine control of the reaction and manufacturing processes enables the reduction of the production cycle time.



Increased productivity

Batchcel™ MES* system helps streamlining your process by reducing operational costs and downtime. It optimises both energy efficiency and cleaning effectiveness.

*MES: Manufacturing Executing System

Modular skidded resin production unit

Consisting of pre-tested modules, our modular resin unit is assembled and started-up in a short time. It integrates state-of-the-art equipment and its operation is fully automated using a dedicated control system.

The unit is complete and includes a 12 m³ reactor, raw materials feed tanks, powder and liquids handling and dosing systems, distillation column and condenser, heating and cooling networks, thinning tanks, pumps, instruments, etc.

A dedicated control system provides the real time monitoring of the production and a fine regulation of reaction phases so as to optimize the batch cycle time and comply with accuracy and repeatability required for quality resin.

Main advantages

- Easy transport.
- Short installation and start-up time.
- Optimised investment cost.
- Quick payback.

Engineering and services (applied to new plants and modernisation projects)

- Audits of existing plants
- Basic engineering (mechanical and electrical)
- Automation and control system
- Procurement, preassembly and quality control
- Erection supervision
- Commissioning and start-up
- After-sales services and training
- Maintenance and spare parts

Technologies directly mastered by ABB



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01 Internal view of reactor with polished mixing tools

02 Skid-mounted condenser

04 Powder hopper with dosing tank

05 Storage tanks

03 Condensers

06 Control system

07 Reactor mixing unit 25 m3

ABB offer process solutions to increase your plant performance:

- heating and cooling by heat transfer fluid,
- weighing, dosing of components,
- powder handling, transfer and dosing,
- PCS/Scada control system,
- computer management of formulae and recipes as well as production parameters,
- design of the main vessels (reactor, mixer...),
- finished product filtration,
- liquid transfer.

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.
- Special treatment of internal reactor surface wall for an easy cleaning.
- 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).
- Variable speed pump and agitator to improve the pumping effect.
- Supply of peripheral equipment: distillation system, thinning tank, etc.

Powder handling

Pneumatic transfer systems from silos to dosing hoppers, ensuring:

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

Liquid transfer through pigged lines

The pigging of pipes used for the transfer of finished products enables:

- product transfer without cross-contamination
- reduction of product loss and recovery of effluents,
- safe transfers in closed system.

Batchcel™: dedicated MES*/Scada system

- Real-time production monitoring,
- Temperature control through algorithms adapted to the different product types and process phases,
- Safe and automated operations,
- Complete traceability of manufacturing operations,
- Batch management,
- Raw materials management,
- Production equipment management,
- Predictive maintenance.

*MES: Manufacturing Executing System



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