

EKATO Pilot Reactor ELA 50

Pilot plant for process development in EX-proof area



EKATO ELA 50

The ELA 50 is a pilot process development plant in a 50 l scale. It comprises a reactor with a coaxial agitator system which allows operation of a central and/or a close-to-the-wall impeller. Because of its flexible mixing system, it is ideally suited for alternating low or high viscosity products with demanding requirements for homogeneity.

A vacuum station can be used for degassing and solvent recovery. Alternatively positive pressure can be applied to the reactor. This 50 liter plant is located within an EX-proof area and is suitable for operation with flammable liquids.

Reactions can be performed under well defined dynamic mixing conditions. As such, it is possible to use data directly from the pilot process development studies for the design of the production-scale reactors. A significant advantage that provides time and cost savings.

Process types

Batch or semi-batch, single or multiphase, across a wide range of different processes:

- Low to high viscosity
- Suspensions
- Degassing
- Dispersion
- Solvent evaporation
- Photo chemical reactions
- Crystallization
- Heat transfer

Agitation system optimization for

- Short mixing times
- Maximized mass transfer
- Efficient suspension of solids
- Effective heat transfer
- Wide range of viscosities

Features

- Plant is EX-proof (T4, IIB)
- Variety of different impeller systems from central impellers to close-to-the-wall impellers (also suitable for parallel coaxial installation)
- Vacuum station with condenser
- Modification for steam injection into the vessel
- Variable vessel geometries
- Process automation system and visualization/data recording
- Double jacketed, heatable bottom valve with minimized deadzone design
- Heatable vapor pipe
- Nozzles for optional measuring devices (pH meter, conductivity probe,...)
- Stainless steel vessel with side glasses
- Automatization of cooling/heating ramps

Our service

Support from EKATO mixing specialists:

- Trials performed at EKATO laboratories
- Scale-up expertise
- Guarantees for key process parameters
- Analytical services (density, viscosity, GC, HPLC)

Operating conditions

- Working volume 50 litres
- Temperatures: -10 to 200°C
- Pressure: 40 mbar (abs) to 5 bar (abs)
- Viscosity: up to 1,000 Pas

Process monitoring

- Temperatures (vessel and jacket)
- Pressure
- Impeller speed
- Impeller torque/power input
- Sampling (in-line)

