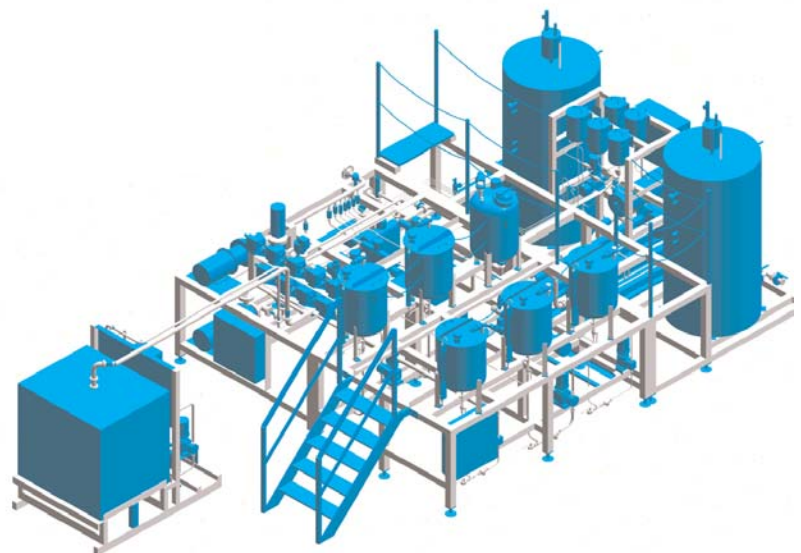


Packages for continuous manufacturing of fabric softener



Key data for the example on the photo

Footprint:	22 m ²
Production capacity:	20 t/h
Operation:	2/3 - shift
Connected load:	25 kW
Raw materials:	11
Type of package:	fully automatic, continuous operation
Short amortisation time	

Package concept

Functionality:

- Continuously operating, recipe-controlled package for the production of fabric softener from all standard surfactant concentrations. On request it can be separated for a master batch/post finishing production method
- Steam sterilisation is possible, thus the basic requirements in the closed system are provided so that no preservatives are necessary.
- Process control via PLC
- Central operation and monitoring of the process via panel-PC at the package. User guidance and entries via touch display
- Recipe management and installation via an additional laboratory PC
- Connection of PLC, package PC and laboratory PC via local network (Ethernet-LAN) for fast data exchange with protocol of the production data via network printer.
- Process visualisation in logically connected, fully-graphic displays with operating reports, measured value and graphic display.

Equipment:

- Selection of vessel design and sizes due to logistic requirements for the vessel design the requirements for operation and package control are taken into consideration
- For each component to be conveyed an optimally selected and designed pump is considered
- Separate flow recording with continuously measuring, highly precise flowmeters for each conveying line
- Mixing by use of dynamic and static mixer and possibly mixing loops
- Sampling for quality monitoring
- Electric control cabinet designed in stainless steel

Process steps:

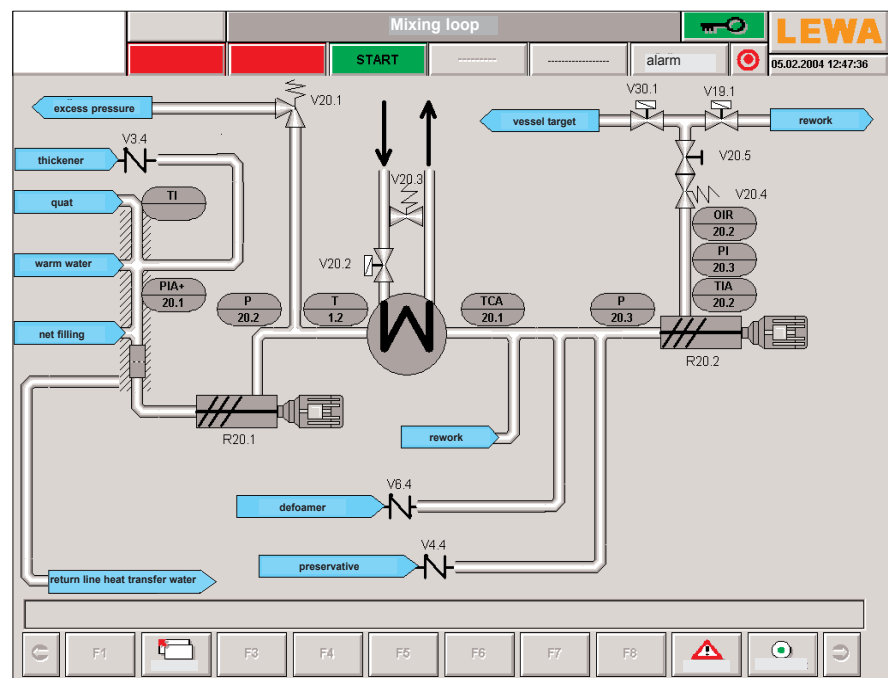
- Tempering of components to processing temperature
- Synchronous metering of the individual substances into different mixing chambers depending on the recipe
- Consideration of fluid groups for improving of mixing quality
- Measuring and adjustment of refraction index, viscosity, temperature
- Cooling of added preheat brought in

Description of function:

The concentrate, warm water and thickener are mixed in the first dynamic mixer. After cold water has been added the product passes through a static mixer and then it passes through a heat exchanger for cooling. Subsequently "small components" are added recipe-dependent and the complete mixture is fed through a further dynamic mixer.

Product which might be produced during start-up and cleaning resp. the change-over to another recipe and which can be not used directly will be discharged into a recycle-vessel via a 3-way valve and can be added to the process immediately or later via a separate pump.

The viscosity of the final product is controlled by the viscosimeter. This check is used for monitoring of the grade of homogenisation because this has great influence on the viscosity.



Example: Package control – figure process step – “mixing”

- Concept, engineering, manufacturing and supply from one source
- If desired scope of supply complete with

- Tank farm / supply vessel
- Transportation of substances from storage to the package
- Tempering
- Metering of individual components
- Mixing of components
- Cooling / full thermotechnical concept, if required
- Cleaning concept (CIP/SIP)
- Instrumentation
- Control / automation

or any of these functional groups

- Customer service by LEWA also after commissioning
- Selection of equipment regarding material, dimensioning and quality to achieve an optimum cost/benefit ratio
- Consideration of on-site particularities with regard to layout planning, material flow, accessibility
- Consequent realisation of environmental requirements regarding the principles "avoiding, reducing, recycling" of substances and energy.
- Continuously operating unit with the basic idea to add the smallest possible volumes to the production process, to avoid loss during change of recipe or to keep it as low as possible
- Reduction of flushing agents to small quantities for cleaning procedures
- Recycling of non-specification compliant product volume in the "recycle process"
- Qualification of operating personnel: no expert knowledge required. For operating the package a training on the operating system and the main components of the package is required only

Price idea:

The main price influencing factors are: grade of automation, scope of supply and quantity of functional groups, extent of the individual additional requirements as well as the number of components and recipes. Typical packages have flows from 5 t/h.

Prices are available at short notice.



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