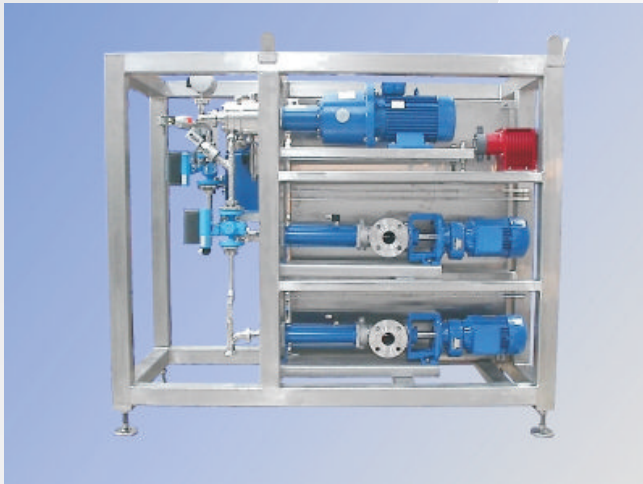


SLES-Solutions and Emulsion in one Process System

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Washing active substances (SLES) are mainly used in shampoos and liquid detergents. SLES is being delivered with a concentration of about 70% and has to be diluted to a concentration of about 28% prior to further treatment and adding of components.



The dilution may be executed in a batch or with a continuous system. SLES is always added to the water, never vis vers. Independent from the high viscosity, SLES can easily be pumped and sheared.

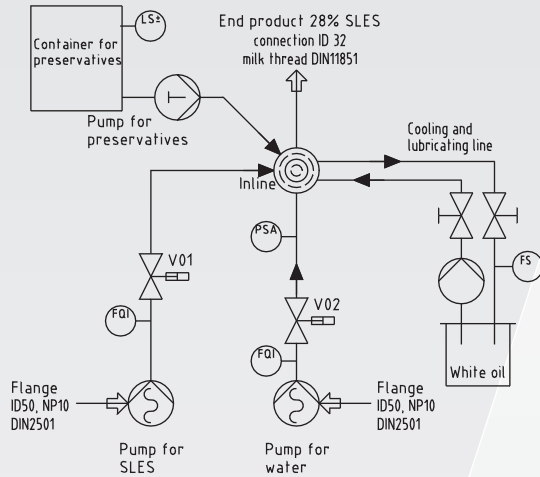
When using a batch system for the diluting process, several problems may occur:

- ▶▶ Because of the big difference in viscosity of the components, it is difficult to mix them with conventional mixers or stirrers
- ▶▶ Large lumps remain and are very difficult to be diluted
- ▶▶ Long mixing times are required to achieve a homogen product
- ▶▶ When using non-appropriate mixing technology, white stipplings can be found in the product
- ▶▶ Wrong handling and operation result in incorporation of air into the product and the formation of a stable foam and a high concentration of air in the end product.

A continuous dilution using an Inline system avoids all these problems and may be realised with a ystral SLES dilution system. The system can produce SLES dilutions, emulsions and suspensions and any other products with up to three different liquid components where an intensive mixing or dispersing is required.



Ystral

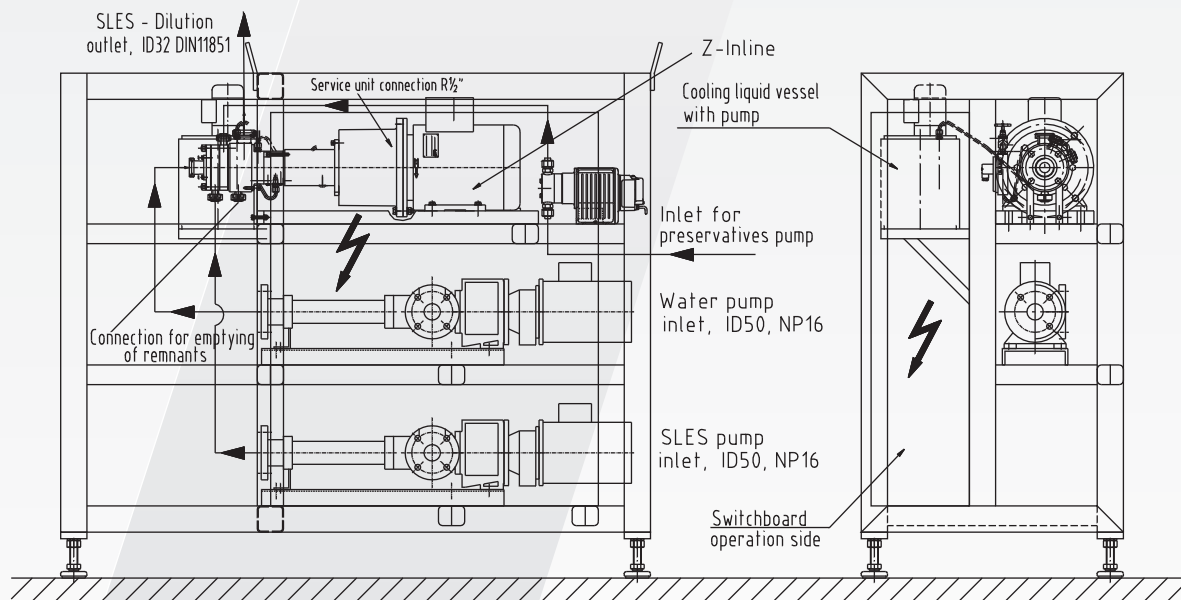


Main component of the system is a three stage Inline dispersing and homogenising machine. Additional to the normal axial inlet this machine is equipped with two or three additional radial inlets directly into the dispersing chambers for additional dosing of components. The watery phase concentrically comes into the dispersing chamber, and through the radial inlets SLES and preservative liquid are added. When producing emulsions, the disperse phase and the emulsifier is dosed through the radial connections while the continuous phase is added concentrically through the axial inlet. The system is operated and controlled by a switchboard with integrated SPS.

The three stage homogenising machine and the dosing pumps are controlled by a frequency converter, the flow rate is monitored by flow metres.

All components - including switchboard with stainless steel housing - are assembled into a stainless steel frame and may be installed in any place. If required, the system may be equipped with casters to be moved around.

Main requirement for the design of the system was the easy cleaning demand. The system may be cleaned by CIP and may be steamed as well.



The series offers systems with a nominal capacity from 1.000 kg to 18.000 kg per hour of ready product.