

MINIPLANT STANDARD-UNIT MIXER DN 50

M140e.0

GENERAL

During the extraction process, a valuable substance is dissolved out of the liquid phase A by means of a second, non-mixable phase B. Although the separation of the valuable substance from phase A by distillation is usually too elaborate, it is easily possible from phase B. Extraction is therefore a preliminary stage prior to subsequent separation by distillation.

A large interphase in the extraction apparatus for substance exchange is necessary to ensure that the valuable substance can dissolve from phase A to B.



Fig.1: Settler with height-adjustable overflow (left), mixer head (right)

CONSTRUCTION

The required interphase in the mixer head is produced in the mixer settler by stirring the two phases, which separate again in the settler. The two phases are sucked in and dispersed with each other by the speed-controlled stirrer in the mixer chamber. The two chambers can be separated by a double weir.

- 👉 Development of extraction processes
- 👉 Suitability as a teaching unit (manual available)
- 👉 Easy to clean and observe
- 👉 ATEX version available

For the height adjustment of the phase separation layer in the settler, the apparatus has an overflow for the heavy phase which is height-adjustable during the process.

Liquid/liquid extractions in the mixer settler have the



Fig.2: Two-phase mixer settler apparatus DN 50

advantage that they can be operated discontinuously and with fluctuating product flows. The concentration profile through the stages is maintained, even when there are interruptions. This makes the mixer settler ideally suited for research and development tasks, although it is also used in production with low separation stage figures.

SAMPLE UNIT

The apparatus illustrated has two stages which operate in reverse flow. Each of the two phases is fed into the respective opposite stage with a metering pump and runs through the system due to the conveyance effect of the stirrers. The overflow phases are collected in two receivers.

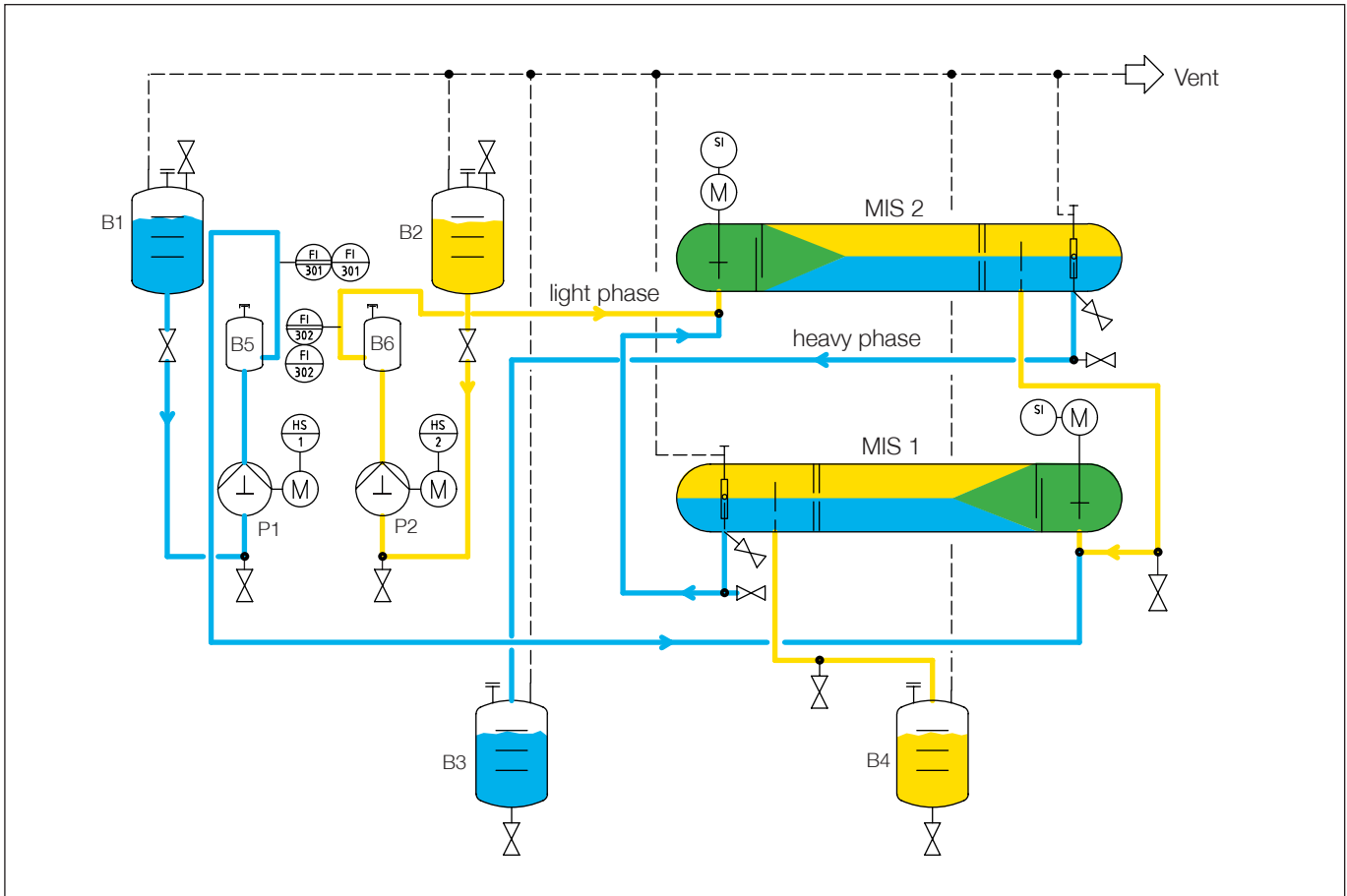


Fig. 3: Flow diagram of a two-stage mixer settler system

TECHNICAL DATA

- 2-stage mixer settler DN 50 (MIS1; MIS2)
- Volume of the settler 0.7 l
- 4 receivers 20 l (B1; B2; B3; B4)
- 2 metering pumps (P1; P2)
- Air vessel (B5; B6)
- Mixer drive with variable speed and digital speed display
- Power line for ventilation

OPTIONS

- Multi-stage version
- Process control system and data recording
- Heating jacket
- Temperature measurement in the settler (shown in front-page photo)
- Scale-up to QVF technical applications

NOTE

Miniplant systems are normally mounted at QVF and delivered with documentation and operating instructions once a FAT has been established.

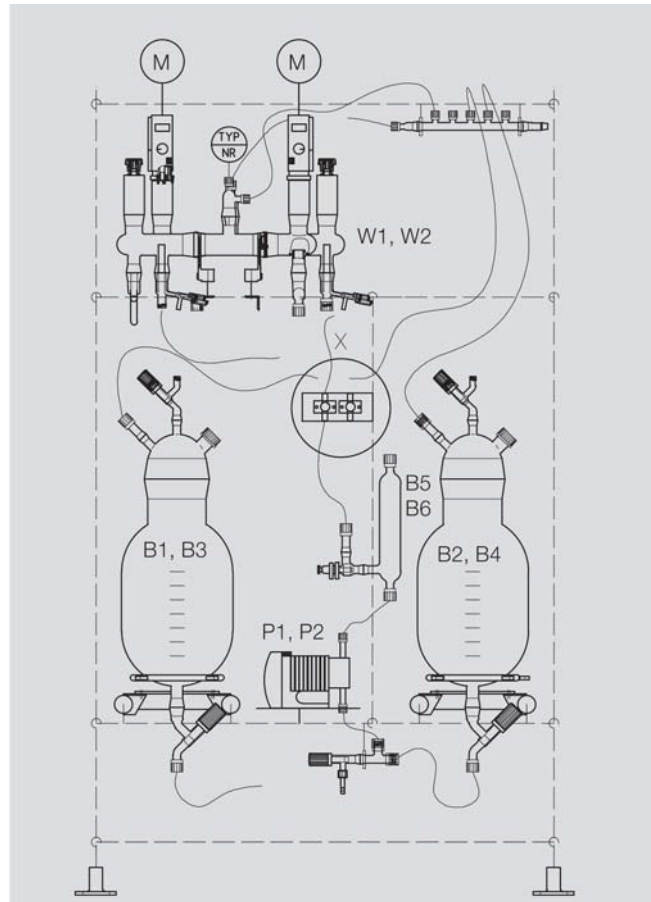


Fig. 4: Setup plan

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