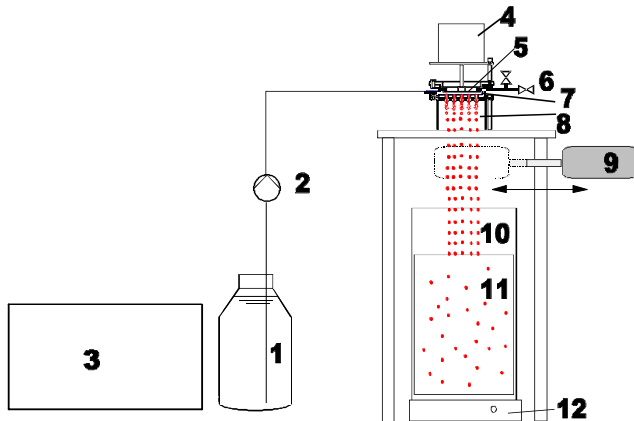


VAR E: SHORT PRODUCT DESCRIPTION



Overview



Short Description

This is an electromagnetically driven multi-nozzle unit based on the laminar-jet-break-up. The open version of the encapsulation system is especially suitable for the determination of the physical parameters during the scaling-up (e.g. flow rate, vibration frequency and amplitude) or for non sterile encapsulation processes. An open unit ensures you fast access to the beads, minimising the time required for the optimisation of the parameters.

Legend

- | | |
|-----------------------------------|---|
| 1 Feed vessel | 8 Sightglass with stroboscopic light |
| 2 Feed pump | 9 Bypass system |
| 3 Control cabinet | 10 Vessel with hardening solution |
| 4 Vibrator | 11 Hardening solution with beads |
| 5 Pulsation chamber with membrane | 12 Laboratory stirrer |
| 6 Connection for vent | Pos. 1 and 10–12 are optional (not included in scope of supply) |
| 7 Nozzle plate | |

Applications

For a large number of applications (e.g. enzyme/drug immobilisation, cell encapsulation, cosmetic applications and many more), microencapsulation opens new technological possibilities.

Principle

A non sterile pump is used to generate a steady pulsation-free flow to the vibrating chamber. The bead generating unit has 13 nozzles. The vibration is superimposed on the product feed in the vibrating chamber by means of a membrane (frequency and amplitude can be adjusted digitally). The generated drops can be observed by means of an LED-stroboscopic light as stationary chains of parallel drops. The stroboscopic light is automatically synchronised with the adjusted vibration frequency. Monodisperse beads of the size between 0.2 and 1.5mm can be generated. The deviations between the applications mainly depend on the viscosity and the surface tension of the matrix. Roughly you can estimate that the smallest achievable drop diameter is 1.5 to 2 times larger than the used nozzle's diameter. The average productivity per nozzle is 400ml per hour, whereas this can significantly differ in function of the nozzle diameter and the jet speed.

Control Cabinet

- | | |
|---|--|
| <input checked="" type="checkbox"/> Rack with display, four lines x 16 characters, programmable micro controller for vibration control and stroboscopic light | <input checked="" type="checkbox"/> Power supply between 110 V and 240 Volt, automatically adjusting |
|---|--|

For more details please contact:

Nisco Engineering Inc.
Dufourstrasse 110
CH-8008 Zurich, Switzerland

Tel. +41 44 380 06 30
Fax +41 44 380 06 31
e-mail mailbox@nisco.ch, www.nisco.ch