

Encapsulation

Unit E VARJ1



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In most applications involving immobilisation of living cells or other biological materials the bead size is needed to be small (<1 mm) and carefully controlled. The reason for this is mostly because of diffusion limitation of nutrients within the hydrogel beads. An easy way for production of small alginate beads in a controllable manner is the use of a coaxial bead generator.

The basic principle of the instrument is the use of a coaxial air stream to pull droplets from a needle tip into the gelling bath. The Nisco J1 is designed for production of smaller quantities of spherical alginate beads ranging in size down to around 500 μ m.

The bead generator with coaxial airflow is basically made of Polyetheretherketone (PEEK) and can withstand most chemicals and high temperatures, which makes the unit very suitable for any disinfecting/cleaning method, typically autoclave cleaning.

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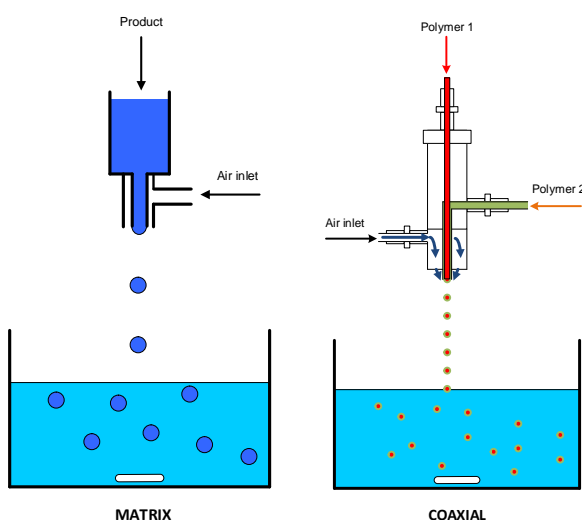
The Unit is equipped with two connections:

- one for the hose, which feeds the alginate (or other) solution,
- and the second connection which is meant for an air-hose with 4 mm OD.

In the coaxial option there is an additional connection for the feed of the shell polymer solution.

The alginate (or other) solution may be fed into the unit with a syringe, using a syringe pump.

The magnetic stirrer is placed underneath the gelling bath to keep the beads separated during gelling.



Principle of coaxial airflow bead generator