



DEVICE FOR POWDER COATING OF MICROPARTICLES

Ideas on utilisation

The technology offered is an innovative device that allows the application of multi-layered coatings for particles with a diameter of 100-1000 μm at low temperature and in a short time without the use of solvent.

Potential adopters of technology

The technology offered is a prototype device for coating fine-grained particles (from group A, B and C according to Geldart classification) with micro and nanopowders. The device operates in a fountain-fluidised system with an internally circulating fluidised thin bed and is a Wurster type apparatus

Advantages of technology

The main advantage of the offered technology lies in the possibility of coating particles with very small diameters (of 100 μm - 1mm). The Wurster apparatus applied, modified in terms of homogeneous fluidisation and circulation of the bed with the smallest grain possible, in contrast to other fluidised apparatus, is characterised by a high circulation speed of particles in the central zone, separated by a partition from the ring zone, which allows coating of fine particles, preventing their clumping and granulation. The apparatus conducts the process of obtaining multilayer coatings free from toxic solvents (solvent-free process) in a simple and efficient way. Another important advantage of the technology offered is the possibility of applying coatings on particles at low temperature and within a short time (even from 1 minute). The application of the device makes it possible to obtain a target (e.g. a pharmaceutical) high quality homogeneous, loose product without agglomerates.

Market and context of technology

The technology offered is an innovative device that allows the application of multi-layered coatings for particles with a diameter of 100-1000 μm at low temperature and in a short time without the use of solvent. This technology can be used in the following areas:

1. In the production of medicines, primarily at the final stage of production of medicines containing water and high temperature sensitive substances, delayed or prolonged release medicines in the form of microparticle cores or microcapsules surrounded by a coating with controlled properties.
2. In the production of food as well as in the production of artificial fertilisation and plant protection products with prolonged or delayed (controlled) release.
3. For laboratory use - in research and development of pharmaceuticals and other chemical substances.

Preconditions in adopting enterprises

Not expensive investment (for an established producer).