

## Cooperation between PINK and Ferrum

### Centrifuge and vacuum drying oven – combined within an isolator for operation in pilot plant processes

To transport toxic substances without contamination from a centrifuge to the next production step, a vacuum drying oven, always means a technological and complex challenge for the operator. In order to make this step more easy and safe, the companies PINK and Ferrum developed a system which integrates both devices in one isolator. Critical and time intensive steps like decanting, transportation and transferring of the pre-treated products, do not apply, which means the product will be transferred directly in the centrifuge. This construction is predestinated for operation in pilot plants, as charges up to 30 liters can be handled. This system protects both, the operator as well as the product, against contamination. It is constructed according to the latest GMP-guidelines. In detail, the system consists of an isolator, a centrifuge and a vacuum drying oven, type VSD.

One component of the system is the isolator. It works in a negative or positive pressure region and possesses ergonomic arranged gloves allowing a safe handling of the product on the front side. The inside is created according to GMP. A CIP-device as well as additional spray guns grant a proper cleaning, in order to avoid any cross contamination after a change of products.

Furthermore the new machine consists of a vertical top discharging centrifuge developed by Ferrum. The volume of the centrifuge cage is 35 liters, the charge volume is 28 liters. Due to a special decoupling the centrifuges' vibrations will not be transferred to the isolator housing. Another advantage is the high cleanliness of the product, gained during the cleaning process as a result of optimal arranged cleaning nozzles. The arrangement of the centrifuge within the isolator allows an operation friendly, manual discharging of the cage. The centrifuge was also constructed in accordance to the GMP-guidelines and is characterized by its easy cleanliness and best visual inspection possibilities.

The treated product is directly inserted from the centrifuge in the vacuum drying oven, type VSD. Due to its patented construction concept without any jointing, no sharp edges or hidden surfaces, the VSD offers an ideal basis for GMP-/FDA processes and extremely pure and contamination free terms of producing sensible and even high toxic products. All surfaces are visually controllable for the operator.

Developed by PINK the isolator with an integrated vacuum drying oven offers together with Ferrum's centrifuge a GMP-conform system, which allows an efficient, safe and clean process of high active substances in pilot plant stations. A substantial advantage of this complete concept is the lack of time intensive steps like decanting, transportation and transferring of the pre-treated product.

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Enquiry No. 21

PiNK®

## Vacuum Drying Technology

**Vacuum tray dryer in GMP design with CIP device (Cleaning In Place) for excellent and reproducible cleaning results**



*With its double-walled jointless interior the VSD system is easy to clean and therefore ideal for GMP processes.*

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**Drying & Processing**

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