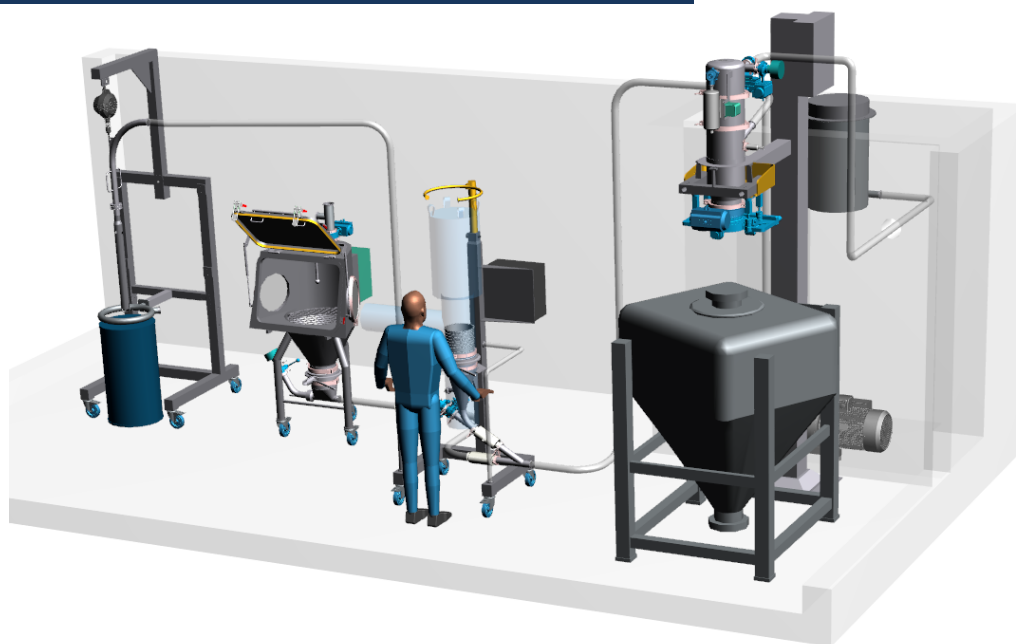


Case Study - Pneumatic conveying of pharmaceutical ingredients

Description:	System for receipts preparation to manufacture pharmaceutical ointments
Product name:	API and several excipients, such as magnesium stearate
Product supply:	Bags and drums
Density:	From 0.3 up to 1.03 kg/m ³
Physical properties:	Products with very bad flowing and sticky
System capacity:	Up to 3000 l/h
Conveying distance:	15 m
Design:	ATEX and GMP compliant
Containment:	Up to OEB4
Receivers:	Rigid container

This project is a combined system using the flexible technology from ILC Dover and the Jetsolutions systems. The PCS allows the powder transfer of the several components in dense phase. The installation is automatically controlled by a PLC. The excipients are sucked from drums using a wand; the bags are emptied into a bag dump station and the API is discharged using the EZBiopac station, which allows the transfer without containment rupture.



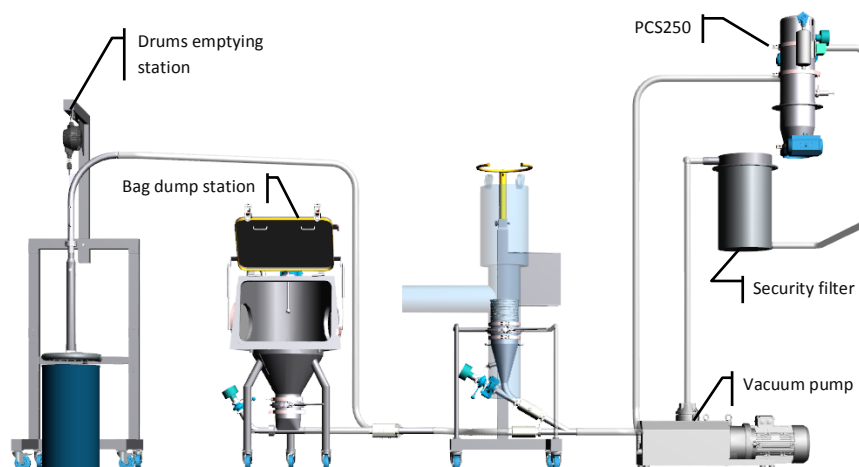
System consisting of:

- Drum emptying station (prepared to receive the Flexi-vac system, to reach OEB5, in case of API transfer)
- Bag dump station (with flexible glove-panel, to discharge the API)
- Dedusting system
- EZBiopac discharge station
- PCS250 with integrated CIP and security sieving
- Full automation of the system, including the control of the lifter and the spli-valve.

Installation concept

The different elements are installed in a clean-room and installed in mobile frames, to allow the easy displacement between the different rooms.

The system uses Harting plugs to connect the several stations with compressed air, vacuum and electrical power and signal.



Drum emptying, bag dump stations and EZBiopac transfer system



The drum emptying station and the bag dump station are used to transfer the excipient in a dust-free operation.

The EZBiopac system is used to feed the process with the API. The system consists of a multi-groove canister, the EZBiopac with integrated o-ring, the separation crimp tool and a suction hopper. With these elements an OEB5 containment level is possible.

PCS

The PCS is used to transfer the products in dense-phase.

One of the main challenges was the very different physical properties of each product (flowability, density, etc). The PCS has an adapted filtration surface and a level sensor, which allow the good operation in multiple products conveying.

The PCS is also used as a security sieving, ensuring that only the product with the right particle size go into the process.

