

Planex System® by Italtvacuum

# Vacuum Drying Revolution

Italtvacuum, one of the most known Italian manufacturers of vacuum dryers and vacuum pumps for the production processes of chemical and pharmaceutical industries, introduced on the market a new horizontal paddle vacuum dryer: the Planex System®.

**P**lanex System® (Patent N° US 5,857,264) is a new concept multi product dryer, developed for vacuum drying of wet powders obtained from centrifuge or filter press, and it is especially suitable for the production of APIs, Fine Chemicals and Intermediates. The equipment consists of a fixed cylindrical chamber with an eccentric agitator with two independent movements, able to rotate on its own axis and tangentially to the cylindrical chamber as well. The double combined rotation allows an optimal mixing of the product, continuously renewing the surface of the mass exposed to evaporation, covering all the volume of the vessel.

The peculiar configuration of the agitator, characterized by a diameter much smaller than the one of the drying chamber, not only allows the continuous revolution of the product but also limits mechanical and thermal stresses, preventing local overheating due to friction. This enables to treat even thermo sensitive products, as it preserves their purity, avoiding degradation of the dried batch.



**Planex System® is the innovative multi product dryer by Italtvacuum**

It must be emphasized that mechanical and thermal stresses on the product are significantly lower than the one observed in traditional paddle dryers, with consequent reduction of the electricity consumption. (according to an independent analysis by Prof. M. Vanni and Eng. M. Garbero of Turin Polytechnic - Material Science and Chemical Engineering Department).

Furthermore the reduced gap between the agitator profile and the wall of the drying chamber avoids deposition of the product and makes the total unloading operation extremely easy and effective. From the obtained results it comes out



**Installation in clean room**

that after discharge the Planex System® has a minimum product residual: on average less than 1%.

### High loading flexibility

PLANEX System® presents a high loading flexibility. It is manufactured with total volumes ranging from 300 to 4.400 litres. Planex System® is absolutely safe for the personnel, the environment and the product, being designed and manufactured in compliance with the ever more severe cGMP and ATEX rules. At the Italtvacuum factory (Borgaro - Turin) a semi-industrial model of the Planex System® is available for pilot trials.

### Components entirely in-house

In addition to the dryer, Italtvacuum is the only manufacturer in the world that can produce all system components entirely in-house, vacuum system included, ensuring that they are sized to meet any processing needs:

- vacuum pumps,
- external safety filters,
- vacuum condensation units with extracted solvent recovery tanks,
- heating/cooling temperature control units,
- PLC system control panels with software certified to CFR 21 Part 11, capable of guaranteeing reproducible batch drying conditions and interfacing with centralized control systems.