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## **Bry-Air and Pharma Industry**

Partners in progress

An association of more than 50 years \_



Thank you for your continuous support throughout the years which has enabled us to continuously provide the best of technology to the pharmaceutical industry. Our relationship with you goes beyond providing solutions, equipment and after sales service.

With our passion for innovation and growth, we have been in the forefront of the latest technological developments, constantly helping you to improve quality and efficiency. And that's been the secret of our successful partnership which we shall cherish... always. Thank you.





Beijing,China



maintains IAQ

**Beijing Daxing International** 

Airport, China

is Beijing's second international airport and scheduled to be operational in 2019. DRI has supplied 32 units of Ecofresh **Energy Recovery Wheels** for the project to maintain the IAQ requirements.





### Museum of The Future, Dubai, UAE,

didust

the iconic art institution is a unique 'incubator for for futuristic innovations and designs'. It is set to open in 2019 in Dubai where DRI is providing innovative air solutions through its Ecofresh Heat Recovery Wheels.

Humidity control or dehumidification is applied in processing, manufacturing, storage, research and testing areas of the pharmaceutical industry



#### Dehumidification prevents:

- Disintegration of tablets
- Brittleness
- Short shelf life
- Discolouration
- Unevent tablet coating







### Bry-Air

- Drying
- Conveying I Blending



### Plastics, the most suitable material for making the medical devices, uses a wide range of resins. Improper drying of resins can cause defects in the product like:

- Low tensile strength Bubbles
- Impact resistance Rejection
- Surface cracking
  - Surface lines
- Internal cracking Silver streaking





and specifically so, because it involves human well-being. Safety is of paramount and with the increasing awareness and know how on medical advancement and technology, the customers today are very demanding and want the best of healthcare facilities available to them.

To support the fast changing growth and needs of pharmaceutical manufacturers and exporters, Pahwa Group is constantly striving and delivering to cater to the most complex quality air needs of the pharmaceutical industry.











### Moisture in compressed air leads to:

- Malfunctioning of pneumatic tools, valves and machines
- Change in colour, odour and taste of pharmaceutical products
- Corrosion in storage vessel, distribution system and components
- Microbiological contamination
- Increase in downtime and maintenance cost



## delair\* A wide range of Compressed Air Dryer to remove







- Poor Indoor Air Quality (IAQ)
- High utility bills
- Cooling solutions for pharmaceutical industry



# AIRGINEERS"

**Providing** Airgineering solution to the pharma industry for over 50 years





# Bry-Air Improves soft gelatin encapsulation process



The softgel capsules are widely used in pharmaceutical industry, including nutraceuticals, vitamins, and mineral supplements. These are known for their greater stability, ability to mask unpleasant odour and taste.

## Softgel manufacturing process

## Encapsulation Drying Packaging





During manufacturing of soft gelatin capsules, the warm liquid gelatin is spread over a slowly revolving, stainless steel drum. A supply of chilled dry air congeals the gelatin as the drum rotates so that a tacky, elastic band rolls off the other end.

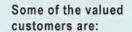
This thin band is automatically formed into capsules, filled with medicine. When the temperature and humidity are too high, gelatin will start softening and prevent solidification. From the capsulating machines the soft, moist capsules are transferred to drying drums or chambers for rapid drying. The moisture has to be removed gradually, to prevent superficial surface hardening. Drying at elevated temperature will impair dried product quality.

## High temperature drying cause following problems:

- Softens the gelatin and prevents solidification
- Uneven drying
- Brittleness

### The Bry-Air Solution

During encapsulation and packaging, the temperature and humidity to be maintained at 23°C and 30±5% respectively but drying is done at 20°C and 15±5%. The drying of soft gel capsule is tricky, as it has to be dried in very controlled environment.



- Dabur
- Narmada Gelatines
- Sun Pharma (formerly known as Ranbaxy)
- Glaxo Laboratories



Leaders in Dehumidification... Worldwide

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