


**PAHWA GROUP**  
Innovation is life

Born in Netherlands...

Made with Pride  
in India

For India... and for the world



Refrigeration Dryer      Gas Dryer      Desiccant Dryer

For drying Compressed Air and Gas

Proven performance helps us stay ahead of the rest  
Largest customer base • Largest sales & service network • Largest capacity unit

## Reaching out through Seminars!

**PAHWA GROUP**  
Innovation is life

**Bry-Air® DRI™ delair® TDS™**

The Airineers at the Pahwa Group crisscrossed the country in the last few months conducting seminars on trends, technology and solutions for:

- Humidity Control
- Compressed Air Drying
- Indoor Air Quality
- Short-term Humidity Control and Drying
- Gas Phase Filtration

and other aspects of air treatment.

Almost **4000** attendees

**1725** from companies

attended **85** seminars

in approx. **45** cities

**Do you want a Seminar?**  
Please email your request to  
[delairmarketing@pahwa.com](mailto:delairmarketing@pahwa.com)  
if you want us to conduct a seminar at your office  
or to attend our future seminar

**Ask for your copy of the seminar material today!**

# When moisture in Compressed air is torture for Pharmaceutical Industry

The production facilities of the different segments within the Pharmaceutical industry have different applications of compressed air. Majority of the pharmaceutical products are highly hygroscopic and tend to suffer physical, enzymatic, microbiological and biochemical deterioration after coming in contact with moisture laden compressed air. The major problem in compressed air systems is the presence of water vapor, dirt, oil vapors, micro organisms, liquid oil, oil aerosols, oil vapors, rust and pipe scales (oils particles are introduced by lubricated air compressors) and solid contaminants which can adversely affect air quality.

## Source of contamination

- Atmospheric Air – Water vapor, dirt, oil vapors, micro organisms
- Air Compressors – Liquid oil, oil aerosols, oil vapors
- Compressed air storage devices and distribution piping: Rust and pipe scales

## PROBLEMS

Moisture in compressed air may lead to :

- Inefficient production process
- Spoiled, damage or reworked products
- Increase in manufacturing and maintenance cost
- Microbiological contamination
- Corrosion within storage vessels, distribution system and components
- Damaged production equipment Blocked or frozen valves, cylinders air motors and tools
- Increase in downtime
- Sluggish and inconsistent operation of valves and cylinder
- Malfunctioning of pneumatic tools and machines

Also, moisture in compressed air may also leads to problems like :

- Change in color of tablet coating
- Blisters on tablets
- Breakage of tablets
- Chemical reactions

Moisture creates the ideal habitat for microorganisms and fungus. Moisture may reside in the piping system near point-of-use applications where compressed air comes into contact with food products. Microorganisms and fungus can grow inside the piping system and then be blown into pharmaceutical applications.

In order to inhibit the growth of microorganisms and fungi, pressure dew point must be below -26°C ( -15°F). Drying the compressed air to a specified pressure dew point is the simplest way to eliminate moisture in the compressed air system. The dew point specification will be of either +3°C (+37°F) or -40°C (- 40°F). In some facilities, both of these specifications may be used to reduce energy costs associated with drying the compressed air – depending

upon whether compressed air has any possibility of coming into contact with food products.

## Use of compressed air in Pharma industry:

In Pharma manufacturing units, generally following compressed air powered Pneumatic systems are used :

Untreated compressed air contains many potentially harmful or dangerous contaminants which must be removed or reduced to acceptable levels in order to protect the consumer and provide a safe and cost effective production facility.

Lid Sealer Machine	Capping Machine	Container Feeder
Liquid Filler Machine	Blister Packing Machine	Pneumatic control and actuators
Auto Container Ejector	Rotatory Continuous Filling Machine	Pneumatic Labeling and Printing Machines
Capsule filling machine	Vacuum cleaning machine	Tablet press machine

## Applications

Conveying – pills, capsules, tablets, packaging materials	Spray system	Oxidation process
Aseptic packaging	Packaging	Cleaning – bottles and containers

## The Delair Solution

Delair offers wide range of Compressed Air Dryer and accessories to provide a complete compressed air treatment solution. Compressed Air Dryer and accessories removes water vapor, dirt, oil vapors, microorganisms, liquid oil, oil aerosols, oil vapors, rust and pipe scales (oils particles are introduced by lubricated air compressors) and solid contaminants from compressed air.

## Delair Refrigeration Dryers

Refrigeration Dryer operates on the method of cooling the air to near freezing point and condenses the water vapor into droplets and it is discharged by automated drainage system.

## Delair Adsorption Dryers

The dryer is based on the principle of heatless regeneration and the physical properties of desiccant to adsorb and desorb the water vapor, It uses pressure swing principle / purge air to regenerate the desiccant bed.

## Filters

Delair also offers Pre Filters and Oil Filters which removes dust particles, oil particles and other types of solid contaminated present in dry air.

Reference :



## News from Group Companies

### ● 1st CBM Dryer supplied by Puriflair India

Puriflair India, associate company of Delair manufactured and supplied CBM - Methane Gas Dryer to Essar. CBM dryer is used to clean Methane gas which comes out of Coal Beds. Puriflair is the first company in India to manufacture CBM dryer.



### ● **Bry-Air**® Launches Adsorption Chiller

Bry-Air launched Adsorption Chiller, based on an innovative green technology, and the first of its kind in India. A lot of low grade process heat (50°C – 100°C) generally goes waste because of the technology gap to utilize it effectively. Bry-Air has launched a futuristic product, using advanced green technology, which can now use this low grade waste heat for cooling without any environmental damage. The Bry-Air Adsorption Chiller is based on an advanced green technology using inert Silica Gel (adsorbent) and Water (refrigerant) pair. It is ideal for process industries like Power Plants, Food Processing, Chemical manufacture, etc. and for Commercial areas like Offices, Buildings, Hotels, Malls, etc.



## Some Recent Big Projects

COMPANY	CONSULTANT	LOCATION	PRODUCT	CAPACITY	QUANTITY
NTPC	Indure	Vallur	Air Receiver	6100m <sup>3</sup> /hr	9
Rourkela Steel Plant A/C Flowmore Ltd.	M.N. Dastoor	Rourkela	Refrigeration Dryer	4000nm <sup>3</sup> /hr	2
			Air Receiver	15.0m <sup>3</sup> /hr	1
Sinter Power Plant, Bhilai Steel Plant A/C L&T	MECON	Bhilai	Refrigeration Dryer	5000nm <sup>3</sup> /hr	2
CAPL Ltd.	L&T A/C TATA	Jamshedpur	Refrigeration Dryer	4400nm <sup>3</sup> /hr	2
Hisar Thermal Power Plant	Reliance Power	Hisar	Refrigeration Dryer	6710m <sup>3</sup> /hr	4
			After Cooler	AC-LP-7500(s)	1
KPO, TATA Steel Ltd.	L&T	Kalinga Nagar	Refrigeration Dryer	6000nm <sup>3</sup> /hr	2
Honda Cars	–	Greater Noida	Refrigeration Dryer	4000nm <sup>3</sup> /hr	1

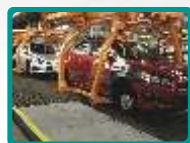


Industrial & Commercial Ducted Air Cooling Systems & Solutions.

**ARCTIC EVAPORATIVE COOLERS**



Range Available upto  
1,70,000 CMH (1,00,000 CFM)



Automobile Industry



Malls



Offices



Warehouse



Paper Mills



Banquet Halls



Textile Industry



Shop Floors



Green Houses



Tea Fermentation



Poultry

and many more....

**Key Advantages - savings**

- Cool large areas economically
- Consumes on an average 90% less power as compared to air-conditioners
- Lower Operating Cost
- No installation cost in spot cooler range
- Easy Maintenance

**Key Advantages - Increase Profits**

- Comfortable working environment
- Improved IAQ
- Higher productivity
- Improved Staff Morale
- Lower Absenteeism
- Less Rest Pauses

**Call us now : 91 8826008129**

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