

# dry facts

...from BRY-AIR

## "Bry-Air not only sells Products — it sells Solutions."



**Bry-Air**

This is the essence of our philosophy! Bry-Air worldwide is known for its expertise as a "solutions" company for moisture / humidity control problems. **This is because we believe that**

**people not only buy things, they buy the benefits offered.** Providing and proving benefits of dehumidification based on engineered solutions has made Bry-Air world leaders in this field.

### "Air-conditioning alone is not enough."

Environmental control in industry calls for control of parameters like humidity, temperature, dust, etc.

Air-conditioning controls temperature and provides cooling for comfort. However, humidity control for industrial applications is more precise and stringent.

Applications data, norms and thumb rules of commercial air-conditioning, therefore, are not always applicable in industries.

The simplest and most economical way of

achieving the desired conditions is by a combination of cooling and dehumidification.

### The Bry-Air Solution - Packaged for convenience

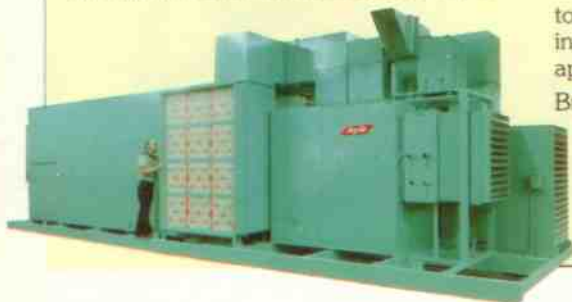
Your one step source for total environmental control.

Bry-Air can engineer and package the dehumidifier with:

- Pre and / or after-cooling coils
- Bye-pass ducting and mixing chamber
- Volume controls and filter elements
- Upgraded fan for total system air

to provide complete environmental control in a single package for any industrial application.

Bry-Air expertise is backed by over 40 years of experience providing most **economical** and **effective solutions** to environmental control problems. That's why they are called the 'Airingers'.



Forthcoming Events		1992
Procurement Electronics Malaysia 92,		1992
June 24-27, Penang.		
Plastics'92, Malaysia		1992
Sept. 25-29, KL.		

### Did you know!!! that...

**A teaspoon full of Silica Gel has an internal area equivalent to a football field!!**

Silica Gel, the highest capacity adsorbent available today, is chemically inert, non-toxic, non-deliquescent, dimensionally stable and non-corrosive.

Silica Gel's adsorption characteristics result from its huge surface area due to highly porous nature of its particles. Standard grade of Silica Gel exhibit an internal surface area of approximately 800 square metres per gram.

When used as a desiccant, standard grade of Silica Gel can adsorb 40% of its own weight of water. Silica Gel can desorb an adsorbate at elevated temperatures and on cooling, regain the original adsorbing capacity. During adsorption or desorption, the Silica Gel does not undergo any physical or chemical change.

Silica Gel is highly versatile, completely safe and finds a wide usage in industrial and laboratory applications. It is so safe that you can eat it !!!



# Spot

## Bry-Air in the picture

You may well ask what has Bry-Air got to do with your breakfast. Well! Here are some clues.

### Tea or Coffee

Tea, being highly hygroscopic, absorbs a lot of moisture at the time of blending, storage and packaging. In the process, it loses its colour and flavour and is prone to spoilage due to fungus growth.

Bry-Air dehumidifiers maintain the required condition of 30 to 35% RH at ambient temperature in the blending, packaging, storage areas in many tea estates / manufacturing units. Just so that you may enjoy that flavoured cuppa.

### And if your choice is Coffee...

Then dry coffee makes the best coffee in the world. Coffee powder / granules, like tea leaves, are highly hygroscopic and need to be processed and packed under strictly controlled humidity conditions.

A number of Bry-Air dehumidifiers maintain the required conditions satisfactorily in many multinational coffee packaging units.

### With Fresh Bread

The special light texture and flavour of freshly baked bread is due to the yeast or the raising agent used. Drying of yeast is a highly intricate process, requiring cold dry air at very precise humidity and temperature conditions so as not to destroy the **seed micro organism**. World famous yeast manufacturers use Bry-Air dehumidifiers to maintain the required conditions.

### And Cheese...

Cheese has to be dried prior to waxing or wrapping. Since large scale cheese making process involves very high temperature and humidity conditions, there is all the more reason to "dry" the cheese before packaging so that the cheese can enjoy a long shelf life. Bry-Air dehumidifiers help make this possible.

### Over the Newspaper...

Newsprint is in short supply in certain parts of the world and mostly has to be imported from Sweden or Finland. The newsprint, in the form of a huge paper roll, is transported by sea where moisture settles on to the rolls due to condensation. The best method to prevent damage due to moisture in the cargo hold is to keep the air inside the hold dry.



### And the after-breakfast smoke...

Tobacco, like other products, is very moisture sensitive and needs to be stored at conditions 67°F and 50% RH to retain its enriched flavour and aroma.

Bry-Air dehumidifiers have been installed by a leading cigarette manufacturer in Malaysia to maintain the required conditions in their tobacco storage area.

... and the list is endless: sugar, biscuits, milk powder, cereals, potato chips, chocolates, soup, soft drink concentrates and energy drinks to name only a few products where dehumidification is essential for the manufacture of quality products.

## WHEN MOISTURE IS TORTURE !!!

In this column we will share with you regularly our experience on major application areas where usage of dehumidification is both extensive and essential.

### Controlled Environment for Clean Rooms

Clean Rooms are workplaces where contamination is controlled. They provide an environment for research, development and manufacturing of equipment or processes which are susceptible to airborne contaminants like dust particles, bacteria, etc. With more and more emphasis on zero defect products, the design parameters and manufacturing norms are becoming extremely stringent. Thus the clean room becomes a specially constructed enclosed area, environmentally controlled with respect to airborne particles, temperature, humidity, air pressure, air pressure flow patterns, air motion, vibrations, noise and viable organisms and lighting.

### Humidity Control — an important variable

Humidity Control is necessary to

- Prevent corrosion
- Prevent condensation on work surfaces
- Reduce static electricity
- Prevent product contamination
- Provide personal comfort
- Compensate for hygroscopic materials and
- Control microbial growth within the clean rooms.

General applications may require humidity levels to be maintained at 35% — 40%. However, critical applications may require lower levels of humidity with closer tolerances.

### Applications of Clean Rooms

Major application areas of clean rooms are in the electronics industry, pharmaceuticals, aerospace, automotive, computers and



many others requiring more stringent manufacturing conditions.

Few exclusive clean room examples where Bry-Air dehumidifiers are effectively employed:

#### Semiconductor Clean Rooms:

Microcircuits and microchips manufacturing requires hygroscopic polymers called photoresists to mask circuit lines for etching process. Because of their hygroscopic nature, they adsorb moisture and, therefore, microscopic circuit lines are cut or bridged, resulting in circuit failures.

#### Pharmaceutical Clean Rooms:

In pharmaceutical manufacturing, many powders are highly hygroscopic. When moist they are difficult to process and have limited shelf-life. But if clean rooms are equipped with desiccant dehumidifiers, these problems can easily be nullified and will allow fast manufacturing of high quality products.

Clean room dehumidification is an important area of Bry-Air specialization. Bry-Air dehumidifiers have been effectively controlling humidity levels in clean rooms for various applications the world over.

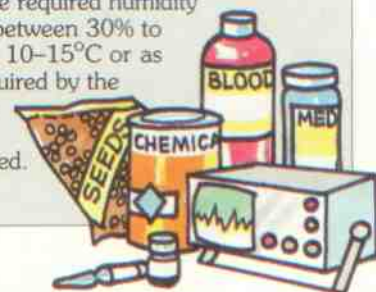
## BRY-AIR DEHUMIDIFIERS An Ideal Companion to Refrigerated Cold Rooms



Cold rooms or cold chambers as they are commonly known, are especially designed sheet metal or polyurethane refrigerated chambers in which required temperature and humidity conditions are maintained. The major application of these chambers are food and perishable preservation (hotels, restaurants, industrial canteens), pharmaceutical, medicinal and chemical storage, blood and vaccine storage, mortuaries, electronics component storage, seed storage, sericulture research

and testing institutes and many more.

In most of these cold chambers, humidity control is achieved by incorporating Bry-Air dehumidifiers. These dehumidifiers maintain the required humidity conditions between 30% to 40% RH at 10–15°C or as may be required by the component stored or manufactured.



## INDOOR LUXURY, OUTDOOR FRESHNESS

客

### "GUEST"

#### A Warm and Hospitable Welcome

The hospitality industry is one of the fastest growing industries today with the world becoming increasingly "smaller" as more and more people take to travelling for business as well as pleasure.



All hotels vie with each other to provide better comforts and amenities to their guests. Bry-Air does its bit to help the hotel industry provide better comforts.

#### Quality Environment

A leading tourist resort in Malaysia has installed Bry-Air dehumidifiers in its luxury VIP suites in order to maintain the

ambience of the rooms. The dehumidifiers prevent fungus growth resulting from high humidity conditions in the rooms due to the attached Jacuzzi baths. The dehumidifiers also maintain the gloss on the carpet as well as keep the fittings shining. Thus the hotel not only provides better comfort to its guests but also saves on maintenance.

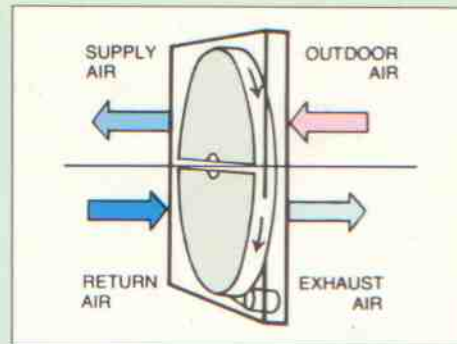
#### More Fresh Air

Another vital area of the hotels is its air-conditioning. With energy costs sky-rocketing, best hotels try and cut corners in the aircon capacity.

All air-conditioned spaces can benefit by introduction of more fresh air. Efforts to

save energy by cutting back on outdoor air quantities has created the phenomenon of "sick building syndrome".

The use of the heat recovery wheel reduces the energy required to condition outdoor air, thereby reducing energy consumption and capital equipment cost. This results in a better controlled, comfortable and pollution-free living environment.



The Exclusive Heat Wheel technology provides design engineers and owners with an effective way to incorporate the indoor air quality recommendations into their building designs, without increasing the cost of the project. Thus Heat Wheels are the best way of cutting down aircon costs. Bry-Air has a number of dehumidifiers and Heat Wheels working in hotels to help create the special ambience which every guest looks forward to experiencing.

### DO YOU NEED A SEMINAR?

A regular aspect of Bry-Air's marketing activity has been presenting seminars on various aspects of humidity / moisture related problems and its solution through dehumidification in the Pharma Industry, Seed Drying & Storage, Corrosion Control, Defence Sector, and many other fields. Aided by a slide show these technical seminars are helpful for plant engineers, consultants and service engineers to understand the basics of damage due to moisture and its control through dehumidification. Technical material specially prepared is available from our office. For specific requests for a seminar or seminar material, write to:

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**Bry-Air**

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