



## *Applications*

IAT dehumidifiers are in use in many industries worldwide. Our customers are involved in various applications such as: food processing, pharmaceuticals, storage areas, ice rinks, chemical processing, water treatment plants, test rooms, libraries, museums, and many more. Innovative Air Technologies is proud to maintain an excellent reputation within these industries by complete customer satisfaction through on-time deliveries, defect free material, and impeccable service.



### *Corrosion Prevention*

All material corrode, which is to say every substance eventually changes from one form to another through chemical reactions. Many of these reactions, especially those which depend on oxygen, are catalyzed and accelerated by moisture. Dehumidifiers are working to protect materials from more subtle and expensive forms of corrosion.

#### Typical Applications:

- Marine drilling rip layup
- Industrial plant layup
- Galvanized steel storage
- Protecting box beams in bridges
- Ball bearing storage
- SCR motor control centers
- Generator rotor storage
- Sodium iodide crystal finishing
- Oil tanker layup
- Automotive stampings protection
- Military aircraft avionics protection
- Civil aircraft corrosion protection
- Computer storage
- Razor blade manufacturing
- Pumping station
- Boiler protection
- Military tanks
- Helicopter storage
- Nuclear waste storage
- Precision tooling storage
- Ammunition storage
- Canal lock mechanism protection
- Tire creel rooms & wire storage
- Lithium battery production
- Military storage
- Electronics protection



### *Condensation Prevention*

When cold surfaces are surrounded by moist air, water vapor will condense on the surface like “sweat” on a cold beer glass in summertime. This can lead to a surprising number of problems. For instance, consumers in a supermarket may not be able to see frozen foods in a refrigerated display case with a glass door. That may mean thousands of dollars in lost revenue. Alternately, condensation can form on hidden aircraft structural members as a plane descends from the cold upper atmosphere into moist environments, which can accelerate stress corrosion, shortening the life of the airframe. In both of these cases, dehumidifiers are installed to surround the cold surface with dry air.

#### Typical Applications:

- Optical polishing
- Environmental simulation
- High vacuum sputtering
- Chilled rollers for film casting
- Altitude simulation cooling
- Typewriter ribbon film coating
- Rock cave storage
- Water treatment plants
- Injection molding
- Refrigerated display cases
- Large gear cases
- Gumball forming rolls
- Refrigerated warehouse floors
- Cold product receiving rooms
- Fruit & Vegetable storage
- Ice rinks
- Surface preparation & Coating

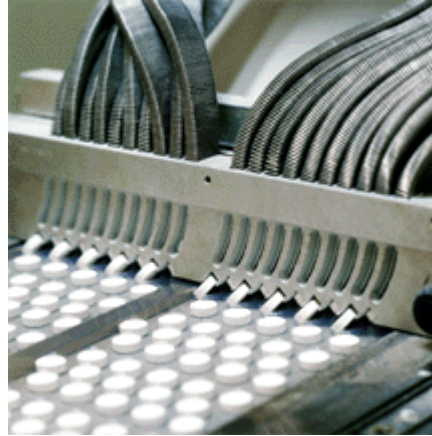


### *Mold/Fungus Prevention*

Mold and fungus are present in almost all materials. They can survive without moisture, remaining dormant for decades, even centuries. But when moisture and a food source become available they will multiply rapidly. This moisture does not have to be in liquid form. Microscopic organisms can use moisture present in solid materials because they need so little. Dehumidifiers prevent the moisture with dry air.

#### Typical Applications:

- |                                   |                                |                             |
|-----------------------------------|--------------------------------|-----------------------------|
| -Grain Storage                    | -Photographic film storage     | -Mummy preservation         |
| -Tulip bulb storage               | -Wooden sculpture preservation | -Historic Bldg preservation |
| -Food plant sanitation            | -Fur Storage                   | -Underground food storage   |
| -Rope fibre storage               | -Cocoa bean storage            | -Milk powder storage        |
| -Dried fish storage               | -Wine cellars                  | -Malt storage               |
| -Museum storage                   | -Fabric & textile storage      | -Cargo protection           |
| -Winter cottage summer protection |                                | - Breweries                 |
| -Summer cottage winter protection |                                | -Archival Storage           |
| -Seed Storage                     |                                | -Military protection        |



### *Moisture Regain Prevention*

Virtually every substance has some affinity for moisture. Even plastic resins like nylon can collect six to ten percent of their dry weight in water vapor. In many cases, this presents no problem. In others, moisture regain can affect critical dimensions just like thermal expansion, or make products that would otherwise flow freely stick together. The typical home salt shaker illustrates this point, moisture regain on humid days clogs the shaker holes. On a dinner table, this may be a minor problem. But in packaging machinery, sticky products have major economic consequences. Desiccant dehumidifiers are effective in controlling humidity at low temperatures, and have been widely applied to prevent moisture regain.

#### Typical Applications:

- Biomedical dry rooms
- Fertilizer packaging & storage
- Pharmaceutical tableting
- Foundry core storage
- Powdered drink mix packaging
- Plastic resin storage
- Instant coffee processing
- Sealed lead-acid battery filling
- Pre-preg material storage
- Paper Storage
- Flour, plastic & powder air veying
- Sugar storage & packaging
- Epoxy powder manufacturing
- Pharmaceutical packaging
- Insulation for cold tanks
- Chewing gum ripening rooms
- Semiconductor & pharmaceutical clean rooms
- Safety glass laminating
- Vitamin tableting & packaging
- Circuit board storage & machining
- Photolithography operations
- Precision color printing
- Cork storage
- Candy tableting & packaging
- Dried vegetable storage
- Propellant mixing & casting
- Missile motor storage
- Contact lens machining
- Filament winding
- Lens coating
- Veneer storage
- Power cable jointing
- Fruit powder handling
- Candy packaging
- Advanced composite manufacturing



## *Product Drying*

Most products are dried using hot air to vaporize moisture and carry it away. Often, however, hot air is either too slow or results in damage to the product. Enzymes, for instance, are destroyed by heat, and if yeast is dried with very hot air, it cannot work properly. The range of product drying applications for dehumidifiers has expanded significantly in recent years, as clients examine the positive effects of low temperature drying on product quality. Dehumidifiers allow these quality improvements without sacrificing processing speed.

### Typical Applications:

- Uncured honey drying
- High voltage transformers
- Whey powder
- Pharmaceutical powders
- Sorbitol
- Chromatography materials
- Emergency oxygen “candles”
- Nylon resin
- Glass powder
- Tomato powder
- Prosciutto ham
- Potato flakes
- Pasta
- Wax coated cheeses
- Tea
- Katha cake
- Onions & garlic
- Jelly beans
- Gelatin capsules
- Plastic resin drying
- Fish drying
- Photographic film manufacturing
- Diagnostic reagent powders
- Instant coffee creamer
- Yeast
- Sugar substitutes
- Low-moisture welding rods
- PET plastic resin
- Expandable bead polystyrene
- Paint pigment
- Cork
- Hard sausage
- Grated cheese
- Cigars
- Seeds
- Gelatin
- Matches
- Milk & whey powders
- Breakfast cereal
- Investment castings-
- Candy coating



## *Dry Cooling*

Air conditioning systems generally use cooling coils to control both air temperature and humidity. In most comfort-conditioning applications, this is an extremely efficient method of controlling humidity. In some circumstances, there is a benefit to adding a desiccant dehumidifier to the cooling system to control humidity separately from air temperature. The benefits are greatest where the moisture loads are high compared to the sensible heat loads, or where they peak at different times. For example, a building may be able to use 65°F outside air for cooling, but the air will still be carrying enough moisture to require dehumidification.

### Typical Applications:

- Public building & auditoriums
- Health clubs
- Hotels & motels
- Supermarkets
- Hospitals
- Advanced HVAC systems
- Nursing homes
- Retail Stores
- Office building retrofits
- Medical office buildings
- Sick buildings