



# Complete humidity control

Application solutions



**KATHABAR**



# Advanced solutions for complete humidity and temperature control

Alfa Laval Kathabar dehumidification systems are engineered solutions for temperature and humidity control for industrial, commercial, educational, institutional and green/LEED facilities. These cost-effective dehumidification and energy recovery systems have been used to clean and dehumidify air for a wide range of industries worldwide – including pharmaceutical, meat and poultry, healthcare, cold storage, food and beverage, and many more.

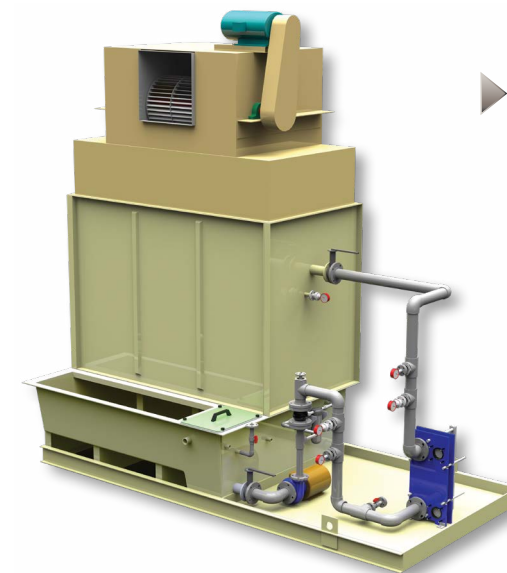
These systems help to improve the reliability, economy and efficiency of any manufacturing or processing operation that is humidity, temperature or microorganism-sensitive.

We meet the ever-changing needs of our customers with quality products – providing reliable, precise and economical temperature and humidity control.

## System advantages:

- Precise temperature and humidity control
- Air scrubbing capability
- Microbiological control
- Energy efficient designs
- Use of low cost utilities (cooling tower water, waste heat)
- Prevents condensation
- No frosting problems
- Winter humidification

## Liquid desiccant systems for dehumidification and energy recovery

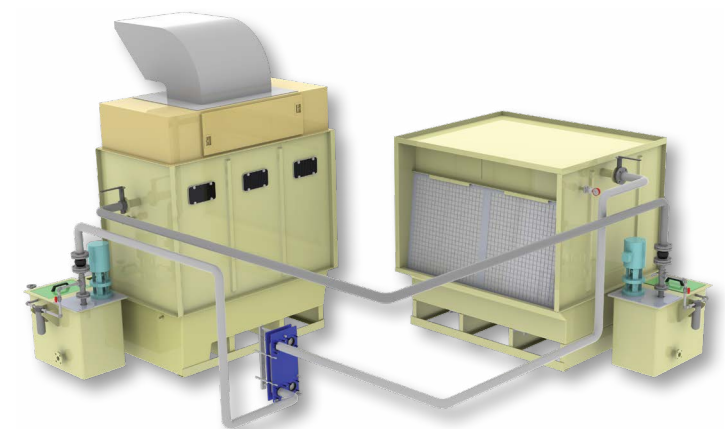


### ► Liquid desiccant system

The Alfa Laval Kathabar liquid desiccant system is the most efficient dehumidification system when cool and dry air is needed. This system is capable of simultaneous dehumidification and direct air cooling, with a range of equipment sizes available from 1,500 CFM to 84,000 CFM.

### ► Energy recovery system

The Alfa Laval Kathabar energy recovery system recovers both sensible (temperature) and latent (moisture) energy from the exhaust airstream, while reducing heating and cooling up to 70%.



## Benefits:

- Elimination of airborne microorganisms
- Energy savings
- Industrial grade construction
- Long service life
- Simple operation and maintenance
- Low cost to own and operate



# Markets and applications



## Pharmaceutical

Provides control over temperature, humidity and bacteria, as well as refrigeration savings.

- Hard and soft gelatin capsules
- Capsule forming and drying
- Pan coating
- Parenteral manufacturing
- Sterile filling
- Spray and powder drying
- Tablet compression



## Medical

Enables surgeries at 55°F with humidity control, improves air quality, and provides bacteria control and energy recovery.

- Surgery rooms
- Recovery rooms
- Intensive care units
- Critical care units



## Biotechnology

Provides condensation control as well as cold, dry, sterile air.

- Clean rooms
- Processing



## Chemical

Provides dry air without refrigeration, allows for efficient processing and packaging, and prevents product agglomeration.

- Fertilizer mixing
- Nylon spinning
- Plastic resin grinding
- Hygroscopic powders handling
- Storage



## Cold storage

Offers energy savings, longer storage life, reduces fog and ice, and improves safety and refrigeration operation.

- Warehouses
- Freezers
- Loading docks
- Spiral freezers



## Gelatin

Results in heat sensitive product drying, which eliminates the need for refrigeration of dryer air.

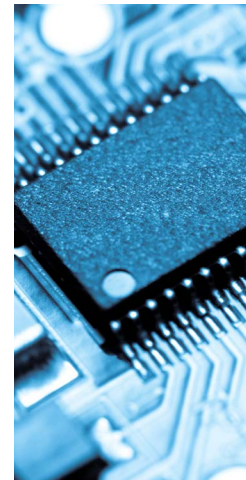
- Hygienic drying
- Hard and soft capsules
- Material handling
- Packaging



## Water treatment plants

Prevents condensation, rusting and deterioration, as well as extends the life of steel pipes, controls and valves, and eliminates the need to insulate pipes.

- Pumping stations
- Pipe galleries
- Water filtration
- Chemical storage



## Semiconductors and microelectronics

Delivers 35-40% RH for rooms or lower, provides clean, sterile air, as well as condensation and humidity control, while also eliminating special low temperature refrigeration systems.

- Circuit board manufacturing
- Chip manufacturing
- Testing and assembly area improvement
- Packaging quality enhancement



## Cereal

Improves drying, eliminates agglomeration, and allows for continuous production.

- Conveying
- Packaging
- Product cooling
- Coating



## Baking and snack foods

Provides frost-free cooling with humidity control and elimination of airborne microorganisms.

- Conveying
- Packaging
- Product cooling and storage
- Drying
- Enrobing



## Confectionary and sugar products

Controls humidity in the manufacturing process for improved product quality, sanitation and shelf-life, ensures product flow, and conditions sugar.

- Pneumatic conveying
- Packaging
- Pan coating
- Cooling tunnels
- Storage
- Cocoa grinding
- Bin conditioning
- Granulation



## Brewing

Provides frost-free operation below 32°F with bacteria free air, reduces maintenance costs, offers precise humidity control, as well as prevents mold growth, and allows floors to dry quickly.

- Yeast rooms
- Fermentation
- Kegging and storage areas
- Aging cellars





Fruits and vegetables

Makes for easier conveying and improves product quality.

- Product drying
- Packaging
- Processing
- Dehydration
- Freezing



Meat, sausage and poultry

Provides energy savings, control over mold and bacteria, allows for flexible drying cycle, handles multiple drying rooms, as well as improves cutting room and washdown room recovery times.

- Sausage drying
- Freezers
- Slicing and cutting rooms
- Loading docks
- Air chilling
- Condensation control



Dairy

Allows for heat sensitive drying, controls bacteria, prevents condensation on cold product surfaces, maintains sanitary conditions and supports product shelf life.

- Spray drying
- Cheese forming
- Sterile filling
- Packaging
- Storage



Green buildings

Provides energy savings, humidity control and better indoor air quality.

- Libraries
- Laboratories
- Auditoriums
- Museums and archives
- Computer rooms
- Commercial buildings



Secure environments

Safeguards inside building air from outside source contamination to protect against biological attacks, bird flu epidemic, viruses and germs, and airborne particular matter.

- Government buildings
- Military facilities
- Hospitals
- Laboratories
- Correctional facilities
- Airports



Steel

Improves blast furnace operation, eliminates corrosion of newly annealed coils during coil cooling, and eliminates refrigeration for these applications.

- Blast furnaces
- Coil cooling



Plastics

Prevents condensation on molds, decreases cycle time, improves part quality and production rate, as well as increases the life of the molding equipment.

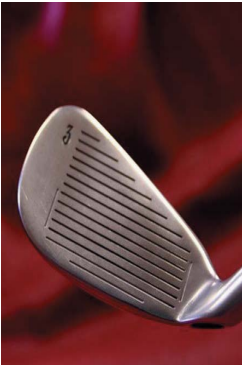
- Injection molding
- Blow molding
- PET plastics forming



Film and glass

Provides low dew point air with precise dew point control and clean room conditions.

- Safety glass film
- Windshield laminating
- Emulsions
- Hurricane window
- Manufacturing
- Film and paper processing



Investment casting

Assists in forming the investment shell through multiple slurry dips and drying stages for uniform results, with reduced energy and improved castings, and reduces rejects and drying cycle time.

- Final drying
- Backup drying
- Prime coat drying



Coffee processing

Preserves premium quality and aroma retention, while achieving moisture regain, sticky product prevention and shortened drying cycles.

- Drying
- Roasting
- Storing

## **Alfa Laval in brief**

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

## **How to contact Alfa Laval**

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