



Liquid desiccant dehumidification systems

Engineered solutions



For over 75 years, Alfa Laval Kathabar has engineered and manufactured liquid and dry desiccant systems for dehumidification and energy recovery applications. Our technologies 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.

Alfa Laval Kathabar liquid desiccant systems provide a perfect solution for a wide range of applications for industrial, commercial, institutional and green/LEED facilities.

Advantages:

- Simultaneous dehumidification and direct air cooling – simple design provides high energy efficiency.
- Microbiological decontamination – effective bioside captures and neutralizes airborne pathogens.
- Performance reliability – non-vaporizing desiccant has infinite life.
- Energy savings – 100% modulation capacity; less energy is required to operate than dry desiccant or mechanical refrigeration systems.
- Precise humidity control (+/-1%RH) – fully adjustable humidity level based on liquid desiccant concentration and temperature.
- Frost-free cooling – temperatures as low as -60°F with no coil to freeze up or defrost.
- FRP (fiberglass) non-metallic industrial construction – long equipment life, reliability and reduced maintenance.
- Design flexibility – Use of hot water or low pressure steam for regeneration (including waste heat); multiple conditioners with single centralized regenerator; vertical and horizontal airflow orientations available.

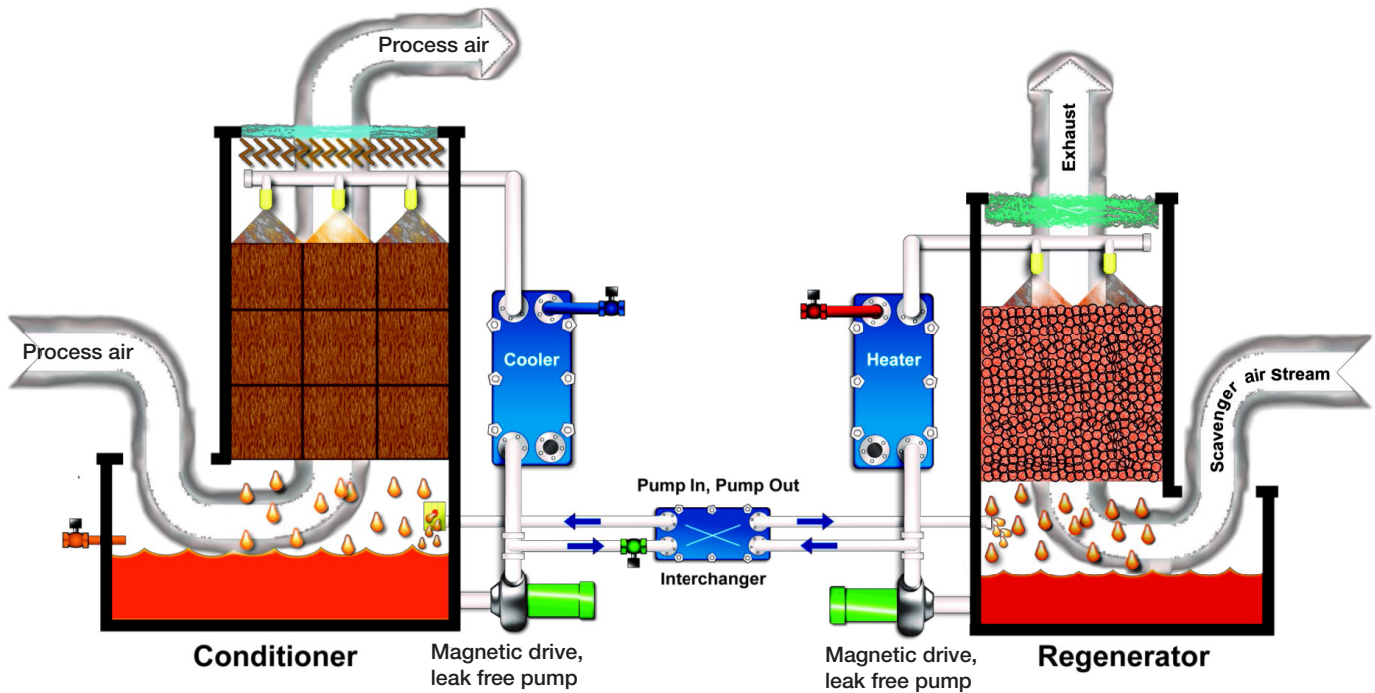
How it works

The Alfa Laval Kathabar liquid desiccant dehumidification systems operate on the principle of chemical absorption of water vapor from air. Our systems utilize a liquid absorbent known as Kathene.® Kathene solution is non-toxic, will not vaporize and is not degraded by common airborne contaminants.

The temperature and concentration of the solution determines the ability of Kathene to remove or add water vapor from the air. The concentration of Kathene can be adjusted so the conditioner delivers air at any desired relative humidity between 18% and 90%. For a given Kathene concentration, lower solution

temperatures enable the conditioner to deliver cooler, dryer air.

The illustration below shows the basic elements of the liquid desiccant system. Conditioned air is cooled and dehumidified by contacting Kathene in the conditioner. By continuously circulating the desiccant through a heat exchanger, energy is extracted from the air and transferred to a coolant. The amount of heat extracted by the Alfa Laval Kathabar dehumidifier is modulated to exactly match the load $\pm 1\%$ by controlling coolant flow through the heat exchanger.



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Liquid desiccant packaged conditioner

Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com