

CASE STUDY

GlaxoSmithKline Pharmaceuticals Ltd.



GlaxoSmithKline replaces desiccant wheel with DuCool unit

A pharmaceutical manufacturing company needed a simple and cost-effective solution to manage its humidity control. Advantix Systems provided that solution with its liquid desiccant dehumidification systems. As a result, the company has been able to control humidity, reduce energy consumption, and save money on operating expenses.

BACKGROUND

Established in India in 1924, GlaxoSmithKline Pharmaceuticals Ltd. (GSK Rx India) is one of the world's oldest pharmaceutical manufacturing companies. GSK Rx India researches and manufactures medicines and vaccines for the World Health Organization. An industry leader, GSK has developed some of the most widely used medicines and currently holds an estimated 7% of the worldwide pharmaceutical market.

CHALLENGE

GSK maintains a manufacturing facility in Nashik, India, an area plagued by extreme monsoon conditions with temperatures of 79-82°F and relative humidity of 75-80%. This facility produces Celin, a cough and cold remedy in the form of a tablet. Celin is manufactured through a process in which granules are compressed into tablets.

The Celin compression area requires stringent conditions of a 75°F and 50% Relative Humidity. If humidity is above this level, tablets may be too soft and could potentially form lumps due to the hygroscopic nature of the ingredients.

Though it shares an air handling unit with other spaces in the facility, only the compression area requires strict humidity control. GSK initially attempted to maintain these conditions by using a desiccant wheel.

The desiccant wheel proved inadequate, however, due to its excessive operating costs. The chemical absorption process to dry the air and remove moisture from the wheel requires heating and recooling which demands high energy consumption. Furthermore, the maintenance and periodic replacement of the wheel created added expenses.

After realizing that its existing system of dehumidification through a desiccant wheel was neither economically nor environmentally sustainable, GSK decided to seek a cost-effective solution for the plant's air treatment operations. This solution needed to be implemented with minimal modification to the existing system and could not compromise the desired conditions.

GSK found that solution in Advantix Systems' innovative liquid desiccant technology.



ADVANTIX SOLUTION

Advantix Systems presented GSK with a solution that provided optimal humidity control and significant energy savings: a DuTreat 3400/9 unit, supplied to the compression room and adjacent spaces. With an unchanged supply air quantity, the DuTreat unit was installed in the return air system's section, thus ensuring minimal modification to the existing system. Other spaces in the facility were even able to benefit from the dehumidified air, a byproduct of the system design. As a result, overall operating costs were lowered by 30%, and maintenance costs were significantly reduced.

GSK has been using DuCool equipment since 2002, when they replaced their existing desiccant wheel equipment. DuCool units have since been installed and maintained in various GSK plants serving several needs and maintaining desired conditions year-round to GSK's full satisfaction.

"The machines were under extensive observation during the first year of installation for overall performance, energy savings, corrosion, and carry-over of desiccant," writes GSK Senior Engineering Manager, Girish Deshmukh.

"Neither corrosion nor carry-over has been observed, and operating costs have been proven. We have observed that the performance of the units is as per the design conditions. We are satisfied with the after-sales services provided to us and are happy to adopt this dehumidification technology."

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GSK Senior Engineering Manager

HOW IT WORKS

Advantix Systems' cooling & dehumidification systems are based on liquid desiccant's natural removal of moisture from air. This non-toxic, brine solution cools, dehumidifies and cleans the air at the same time without ever needing to be replaced and without exiting the system. When heated, the liquid desiccant releases the moisture back outside in the form of warm, vapor air, eliminating condensation from any point in the system. Liquid desiccant is also a natural disinfectant, eliminating bacteria, microorganisms, and odor from the air in just one pass.



For more information:
email: info@advantixsystems.com
phone: 305.503.0446
www.advantixsystems.com