

ISSUES CAUSED BY LOW OR FLUCTUATING RELATIVE HUMIDITY CONTINUED

- Competitive landscape:
 - In recent years there has been an increase in production of generic drugs due to the promoting by the FDA.
 - Manufacturers of pharmaceutical drugs have had to streamline processes and shorten the testing phase in order to compete with the manufacturing of generic drugs.

DRISTEEM RESOURCES

Presentation: Humidity and Occupants - What the Latest in Humidity Research Means for You
www.ahrinet.org/App_Content/ahri/files/Humidity_Occupants_Presentation.pdf

For application assistance, contact your regional sales manager or Inside Sales representative at unitorder@dristeem.com.

SOURCES

- “AMA: Drug Shortages a Matter of National Security,” Sara Berg, Senior News Writer, American Medical Association (AMA), 12, June 2018

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PHARMACEUTICAL
MANUFACTURER

HUMIDIFICATION
BUYER'S GUIDE



WHY HUMIDIFY PHARMACEUTICAL MANUFACTURING FACILITIES?

As the competitive landscape changes, manufacturers of pharmaceutical drugs are looking for ways to increase productivity and eliminate waste to meet the demands of consumers. Through a customized solution specific to a manufacturer’s needs, better control of relative humidity can create an additional layer of protection to protect product integrity, lower the risk of contamination, decrease the cost of production, and minimize waste.

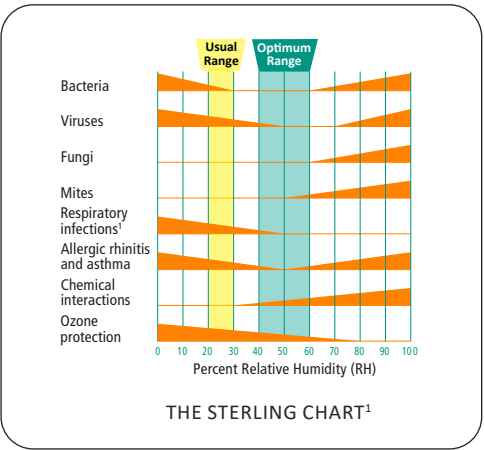
Critical environmental parameters including temperature, humidity, room pressurization, air change rates, and operating particle counts must be carefully considered. Optimal levels and tolerances may vary by room in a pharmaceutical manufacturing facility and separation between rooms must be planned in accordance with those requirements. Some processes require dedicated or redundant HVAC system in order to preserve appropriate room conditions.

By way of example, when humidity levels are lower than 45%, a manufacturer may experience static buildup which can cause medicine to dry out and become brittle. There may also be issues during tablet pressing and packaging stage as excessive static causes medicine to stick together. Too much humidity creates an ideal environment for viruses, bacteria, and mold to grow, compromising the integrity of the pharmaceutical drug. It is recommended pharmaceutical manufacturers maintain the RH between 35 and 60 percent within their facility by the ASHRAE Handbook.

As DriSteem humidifiers have been installed within manufacturing facilities around the globe, including some currently producing the vaccination for SARS-CoV-2, you can trust these systems to offer the protection you need.

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- Increasing demands:
 - As recently reported by the American Medical Association (AMA), prescription drug shortage remains a concern.¹
 - As the number of insured citizens increases, so does the demand for prescription drugs.
 - As lifestyles become more sedentary, there is an increase in chronic diseases.



WHY CHOOSE DRISTEEM HUMIDIFICATION SYSTEMS?

COMMITTED TO QUALITY

DriSteem has been designing and building world-class humidification business for more than 50 years and is committed to making the best products in the HVAC industry.

DriSteem humidification systems are made to fit each unique application, whether it is ensuring the success of critical industrial processes, preserving fragile and valuable museum artifacts, or protecting the health and well-being of building occupants. DriSteem's mission is to support healthy environments – studies show that when room relative humidity (RH) drops below 40 percent, incidents of respiratory illness increase but by adding proper humidification, student and employee absenteeism can be significantly reduced.

DriSteem U.S. operations are ISO 9001:2015 certified and committed to providing high-quality products, efficient services, on time delivery, and innovative solutions.

SUPPORT & RELIABILITY

DriSteem sales representatives are the industry experts in humidification systems, and are trained to recommend and specify the best solution for any application. They are willing to go the extra mile to make sure everything runs smoothly at start-up and for the life of the equipment.

DriSteem stands behind their products with a world-class Technical Support team available to troubleshoot any issues that may arise. They can also provide start-up assistance and offer field service visits.

CASE STUDIES & RESEARCH

Support your business case with data – DriSteem is continually adding to our collection of white papers and case studies.

DriSteem partnered with the Mayo Clinic to determine whether low humidity levels during the dry winter months have an effect on the spread of flu virus in a classroom environment. The study showed that adding steam humidification resulted in a significant reduction in the total number of influenza-positive samples in the air and on surfaces.

Reducing the spread of these viruses is especially important for students at K-12 schools because research has shown that missing just 10% of school days in a year for any reason predicts low student achievement. When viruses spread among students, teachers also tend to get ill and have to take sick days. Having to rely on substitute teachers too often can negatively affect lesson plans and is also expensive for schools.

School budgets also may suffer when students don't attend. In many states, school budgets are based on the average daily attendance at a school. If many students are absent, the school has less money to pay for essential classroom needs.

See the full study here: <https://dristeem.azureedge.net/public-documents/docs/default-source/azure-public/case-studies/mayo-clinic-humidification-case-study-0518.pdf?sfvrsn=2>

"Humidity as a non-pharmaceutical intervention for influenza A" published study: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0204337>



DRISTEEM SOLUTIONS

XT SERIES ELECTRODE HUMIDIFIER

Good choice for single-room humidification. It can mount on a wall and disperse steam directly into a room such as a band or chorus practice space.

- Easy to maintain: No cleaning required. Simply replace the affordable steam cylinder when prompted by the controller display.
- Compact to fit in small spaces.

VAPORMIST® HUMIDIFIERS

Disperses steam humidification through ductwork with dispersion tubes or panels, or directly in the space.

- Full enclosure suitable for finished spaces
- Can be wall mounted

VAPORSTREAM® HUMIDIFIER

Disperses steam humidification through ductwork with dispersion tubes or panels, or directly in the space.

- Industrial-grade unit designed to meet the humidification demands of any building environment
- Mount options: Trapeze hanger, wall brackets, support legs
- Seismic certified option (OSHPD)

GTS® HUMIDIFIER LX SERIES

The LX Series is the only gas-fired humidifier that combines the highest efficiency on the market with ultra-low NOx in a single design.

- Condensing design for highest efficiency and PVC venting
- Ultra-low NOx certified to SCAQMD 1146.2 standards
- Smart drain technology adjusts drain intervals automatically based on water quality
- Universal water control for use with any water type, including RO/DI water
- Modulating output with minimum 5:1 turndown for accurate humidity control
- Outdoor and indoor models for application flexibility

STEAM DISPERSION

Depending on the application, steam dispersion options may include:

- Ultra-sorb® Model XV steam dispersion panel
- Ultra-sorb® Model LV/LH steam dispersion panel
- Ultra-sorb® Model MP steam dispersion panel
- Multiple-tube humidifier
- Space Distribution Unit (SDU)



XT SERIES
ELECTRODE HUMIDIFIER



VAPORMIST HUMIDIFIER



VAPORSTREAM HUMIDIFIER



GTS HUMIDIFIER LX SERIES



STEAM DISPERSION OPTIONS