

## Humidifiers and Dehumidifiers

Humidity is an important parameter for overall indoor air quality. Indoor relative humidity (RH) should be kept below 60 percent and ideally between 30 and 50 percent, if possible. When relative humidity is too low, as is frequently the case in New England during the winter months, conditions such as dry throats, nasal passages, eyes, and skin can result. Oftentimes, these conditions can be mistaken for, or coincide with, respiratory illness or exposure to allergens or irritants. Drinking plenty of water to stay well hydrated in the winter is important to help alleviate these conditions. Sometimes humidifiers or vaporizers can also provide relief by increasing the relative humidity, however, these units must be used properly so that they do not introduce serious indoor air quality issues.

When relative humidity is too high, dehumidifiers can be used to remove moisture from the air. High relative humidity can be present during the summer months in buildings that do not have air conditioning or in places that are damp for extended periods such as basements or buildings that have experienced a flood. It is important to keep indoor air relative humidity levels low for comfort and to preclude the growth of mold and presence of other allergens.

Please follow the guidance below to decide whether use of a humidifier or dehumidifier is right for you, and what you can do to use these items safely and effectively. If you have questions or concerns about the relative humidity in your workspace, please contact EH&S at (413)-545-2682.

### Tips for Appropriate Use of Humidifiers and Vaporizers:

- Always contact EH&S if you believe there is a problem with indoor air quality in UMass owned spaces. EH&S can perform an assessment to determine what the potential issues and causes might be, including elevated or reduce relative humidity.
- Humidifiers and vaporizers can harbor mold and bacteria. Ensure these items are cleaned regularly in accordance with manufacturer's recommendations to prevent accumulation of potential airborne allergens and pathogens.
- Always use deionized or distilled water in humidifiers and vaporizers to prolong the life of the units and prevent the aerosolization of minerals and other materials that may be present in tap water.
- Do not use essential oils or other odorous items in humidifiers and vaporizers. These items can irritate sensitive coworkers and can negatively impact indoor air quality.



### Tips for Appropriate Use of Dehumidifiers:

- Dehumidifiers should always be used after floods to ensure areas dry promptly. If you experienced a flood, contact Solutions Center at (413)-545-6401 to ensure that the area is appropriately cleaned and dried.
- Dehumidifiers should be used in areas of persistent high (i.e., greater than 60%) relative humidity when other means, such as improved ventilation and remediate of water intrusion, are not feasible or sufficient to reduce levels to acceptable values. Please contact the Solutions Center at (413)-545-6401 to evaluate potential solutions for these areas and to secure a dehumidifier for temporary or permanent use.
- Condensate dehumidifiers with catch basins must be emptied on a regular basis. These units have a float switch that will trigger shut down of the unit when the reservoir is full, so they must be emptied to ensure continued operation. Catch basins that are left to stand with water can also harbor mold and bacteria. It is often helpful to empty the catch basin before it is completely full to reduce spilling of water.
- Condensate dehumidifiers with drainage hoses must have a drain for the hose. Ensure that the hose is plumbed securely to an operable drain. Tape can be used to secure hoses so that hoses are not ejected from drains in the event of higher pressure discharge.
- Ensure that the air intake and exhaust are not blocked on dehumidifiers. Obstructed airflow can negatively impact the performance of units. Provide adequate clearance from walls, furniture, and other items in accordance with the manufacturer's recommendations.
- Ensure that all filters are changed or cleaned on a regular basis in accordance with the manufacturer's recommendations. Dirty or clogged filters can harbor potentially harmful microorganism and can restrict airflow for the unit.



### References and Additional Resources:

1. EPA: Why and Where Mold Grows. <https://www.epa.gov/mold/mold-course-chapter-2#Chapter2Lesson3>
2. EPA: Care for Your Air: A Guide to Indoor Air Quality. <https://www.epa.gov/indoor-air-quality-iaq/care-your-air-guide-indoor-air-quality-printable-version>
3. Harriman III, L. G., Plager, D., & Kosar, D. (1997). Dehumidification and cooling loads from ventilation air. ASHRAE journal, 39(11), 6.
4. US Energy Star: Dehumidifier Basics: [https://www.energystar.gov/products/appliances/dehumidifiers/dehumidifier\\_basics#Humidistats](https://www.energystar.gov/products/appliances/dehumidifiers/dehumidifier_basics#Humidistats)