

Microbe Management for Schools

Cleaning and sanitation of school facilities is an important component of pest management. Microbes such as molds, mildews, bacteria, and viruses can present health risks in schools. Unsanitary conditions are also conducive to infestations of insect and vertebrate pests. However, misuse of cleaning and anti-microbial chemicals also pose risks to school occupants. Therefore, it is important that any compounds used for cleaning and disinfecting be selected, used, stored and disposed of properly to ensure human health and safety and minimized environmental impacts.



The first step in implementing an IPM program for microbes is to distinguish between cleaning and disinfecting tasks. Cleaning activities, such as scrubbing with soap and water, can be used to remove or kill many microbes and are sufficient in many cases. Disinfecting tasks, on the other hand, are specifically designed to kill microbes and often rely on the use of disinfectant products containing anti microbial chemicals such as chlorine bleach. The best approach in schools is to use disinfectants only where and when needed (primarily in bathrooms, locker rooms, and on food preparation surfaces in kitchens). Cleansing with low-risk products, such as soaps, detergents, or enzyme-based compounds, is usually sufficient for most routine sanitation needs such as in hallways, offices, and classrooms.

According to federal regulations, any product labeled as having anti-microbial properties is considered to be a 'disinfectant'. Many of these products contain active ingredients, such as chlorine bleach, that can be hazardous to human health if used inappropriately. In fact, disinfectants are regulated by the US Environmental Protection Agency (EPA) as pesticides and must be used in accordance with state and federal pesticide laws. Check with your state officials to find out the state laws regulating the use of disinfectants in schools in your state. Products registered as disinfectants have an EPA registration number on the label.

Cleaning products for which the manufacturer makes no anti-microbial claim, are not registered by the EPA as pesticides. However, many cleaning agents contain ingredients, such as chlorine bleach, ammonia, acids or other chemicals that can be hazardous to humans or the environment with improper use or disposal. Therefore, it is important to check each product label and Material Safety Data Sheet (MSDS) to determine what precautions should be used to ensure that products are used safely and effectively.



Basic Tips for Cleaning and Disinfecting in Schools:

- Routinely inspect all facilities and repair water leaks and other moisture problems to prevent microbial growth.
- Distinguish tasks requiring disinfecting from those requiring cleaning and select products that do not contain disinfectants for routine cleaning. Use disinfectant-containing products only when necessary.
- Follow directions exactly. Use all products according to all label regulations and instructions.
- Staff should be adequately trained in appropriate use of all cleaning and disinfectant products.
- Avoid air 'freshener' products. Instead, find and eliminate odor sources and ensure adequate ventilation.
- Diluting and Using Cleaners and Disinfectants: Use proper ventilation when diluting and using anti-microbial and cleaning products. Prepare only the amount of solution needed for immediate use. Never combine products containing chlorine bleach with products containing ammonia or acids. Avoid the use of spray formulations, especially when buildings are occupied. Clean all equipment, including mops, pails, and measuring containers immediately after use.
- Product Selection: Consider risks as well as effectiveness when purchasing cleaning and disinfectant products. Establish environmental and human health risk criteria for purchasing custodial supplies. Review MSDS sheets and product labels and then select products that meet those criteria. Select products that do not contain known carcinogens or ozone-depleting substances and that have low concentrations of volatile organic compounds (VOCs) and phosphates. Avoid purchase and use of products in aerosol cans.
- Storage: All anti-microbial products should be stored in secure areas inaccessible to children. Keep MSDS sheets for every stored product on file in a location where they can easily be located. Store all products in original containers. Ensure that storage areas for corrosive, volatile, flammable, or explosive products meet standards for safe storage of hazardous chemicals. Routinely inspect all containers and eliminate damaged, leaking, or outdated products. Follow product label instructions for spill cleanup and proper disposal of unused products.
- Non-routine use of Anti-microbial Products: Mold and mildew growth in heating, ventilation, or air conditioning systems (HVAC) or those resulting from moisture control problems such as a roof or pipe leaks, blocked drainage systems or poor ventilation should be addressed by persons with professional expertise. Some states also have laws regulating such non-routine use of anti-microbial products for use.

Resources for More Information

American Lung Association School Programs.

<http://www.lung.org/school/>

US Environmental Protection Agency.

<http://www.epa.gov/iaq/>

National Anti-microbial Information Network, Oregon State University.

nain@ace.orst.edu. 1-800-447-6349

EPA:

Maine School Integrated Pest Management Program

ME Dept of Agriculture, Food, and Rural Resources

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