

*This article originally appeared in the February 2021 School Business Affairs magazine and is reprinted with permission of the Association of School Business Officials International (ASBO). The text herein does not necessarily represent the views or policies of ASBO International, and use of this imprint does not imply any endorsement or recognition by ASBO International and its officers or affiliates.*

# Green Cleaning Can Help Schools Safely Open

*Guidance for green cleaning, disinfecting, and working toward safe school re-opening.*

By Alicia Culver



CAVAN/STOCK.ADOBE.COM

**W**ithout question, 2020 was a hard year for school districts, but we did learn about the virus that causes the COVID-19, how it is transmitted, and steps schools can take to safely reopen.

Although some school districts are reluctant to change their cleaning and disinfecting practices, others are seizing this opportunity to implement a green cleaning program. Their goal is to ensure that cleaning and disinfecting products and procedures protect custodial

workers, students, teachers, and other school building occupants from exposure to SARS-CoV-2 (the coronavirus that causes COVID-19) and other pathogens while avoiding products that contain chemicals known to cause asthma, cancer, or chemical burns.

Unfortunately, many conventional cleaners and disinfectants contain chemicals such as ammonia and bleach that are known to cause serious health problems. New or worsening asthma is of particular concern because, according to the U.S. Centers for Disease Control

(CDC), it is an underlying condition that may put custodial workers, who are on the frontline of keeping school building occupants safe, including teachers and students, at higher risk if they become ill with COVID-19.

Below are several steps school business officials and facility managers can take to specify, procure, and effectively use green cleaners and safer disinfectants.

**1. Give germs a 1-2 punch.** Federal and state health agencies agree on the need for a two-step process that starts with daily cleaning followed by disinfecting surfaces that people frequently touch such as door knobs, desktops, chairs, tables, light switches, sink faucets, and flush handles.

---

## Simply spritzing dirty desktops with a disinfectant won't reliably kill viruses and other microbes.

---

The CDC, for example, emphasizes that “Cleaning of surfaces followed by disinfection is a best practice measure for prevention of COVID-19 and other viral respiratory illnesses.” The CDC further explains that, “Cleaning reduces germs, dirt, and impurities from surfaces or objects and works by using soap (or detergent) and water to physically remove germs from surfaces. Disinfecting kills (or inactivates) [remaining] germs on surfaces or objects. Disinfecting works best by using chemicals, as directed, on surfaces after they’ve been properly cleaned.”

Simply spritzing dirty desktops with a disinfectant won't reliably kill viruses and other microbes. Conversely, using microfiber instead of cotton mops significantly increases the effectiveness of cleaning products in removing dirt and germs.

A study published in the *American Journal of Infection Control* reported that, “The microfiber system demonstrated superior microbial removal compared with cotton string mops [95% versus 68%, respectively] when used with a detergent cleaner” (Rutala et al 2007). Microfiber mops and cloths can also prevent germs from being transferred from one room or surface to another.

**2. Put green cleaners to the test.** Try out products such as general-purpose, floor, glass, and non-disinfecting restroom cleaners that have earned one of the following low-toxicity (green) certifications: Green

## DO THE MATH

**C**oncentrated green cleaning products that work with automatic dilution systems can save schools a significant amount of money. A 2010 study by Tyler Espinoza and others with the San Francisco Department of the Environment reported that conventional cleaners in aerosol cans cost about 27 times more than equivalent certified green cleaners, which are typically packaged as concentrates. Not all concentrates are equal. When calculating costs, review the dilution ratio in the manufacturer's instructions.

New York State, which adopted green cleaning laws for schools and state agencies over a decade ago, reported that using green cleaners has not cost districts and state agencies more money. Instead, it noted that implementing a green cleaning program may reduce their overall cleaning program cost by, for example:

- Reducing the amount and number of cleaning products needed;
- Causing a reduction in sick time and at-work injuries; and
- Instituting an overall green cleaning training program designed to reduce waste and obtain the best results.

Find out more about New York's program at <https://greencleaning.ny.gov/faq.aspx>.

Seal, U.S. Environmental Protection Agency (EPA) Safer Choice, or UL ECOLOGO.

These multi-attribute certifications, widely relied upon by government purchasing agencies across the United States and Canada, ensure that green cleaning products are free of chemicals that can cause asthma, cancer or chemical burns to the eyes or skin, and are not toxic to fish and other aquatic organisms.

These certifiers also make the purchasing process easy by maintaining a list of currently approved green cleaning products. And while certifiers confirm that products that have earned their eco-label also meet industry's cleaning performance standards, facility managers should test a few brands to identify products that work the best in their facilities.

**3. Secure discounts on certified green cleaners.** Ideally, a school district will choose a line of certified green cleaners that aced their demonstration tests so that product procurement, use, and training procedures can be standardized, and bulk discounts can be secured for all the buildings in the district.

Districts can acquire green cleaners at discounted prices by going out to bid on their own or by

piggybacking on contracts that have been negotiated by state governments or other cooperative purchasing organizations. Green cleaners are typically offered on contracts for janitorial supplies and facility maintenance products.

If your school facilities are cleaned by outside companies, you can require service providers to use certified green cleaners and asthma-safe disinfectants and provide you with a list of compliant products they plan to use on various surfaces.

Districts also can give preference to service providers that are certified under Green Seal's GS-42 standard or demonstrate they have experience implementing a green cleaning program for their other customers.

---

## Finding an “asthma-safe” disinfectant is a little trickier than choosing green cleaners because most disinfectants do not carry an eco-label.

---

**4. Switch to safer disinfectants.** In addition to using certified green cleaners, school districts should purchase and use safer disinfectants, which are effective against SARS-CoV-2 and other pathogens of concern (e.g., HIV and other bloodborne pathogens, MRSA, and viruses that cause the flu) *and* do not cause asthma or other serious health effects.

The U.S. EPA requires surface disinfectants to be registered as “antimicrobial pesticides” and allows them to list only demonstrated efficacy against specific pathogens, including SARS-CoV-2. The Association of Occupational and Environmental Clinics (AOEC), which is the nation's premier authority on workplace-related asthma, has identified several disinfectant active ingredients (i.e., the pesticide in a disinfectant that kills germs) that cause or worsen asthma. These “asthma-gens” include chlorine bleach (sodium hypochlorite), quaternary ammonium chloride compounds (e.g., benzalkonium chloride), and hydrogen chloride (hydrochloric acid).

Finding an “asthma-safe” disinfectant is a little trickier than choosing green cleaners because most disinfectants do not carry an eco-label. However, there are ways to identify disinfectants that are free of asthmagens and carcinogens. Look for disinfectants on the EPA's *List N: Disinfectants for COVID-19* that contain only the

## ADDITIONAL READING

- ***Cleaning, Disinfection and Hand Hygiene in Schools: A Toolkit for School Administrators.*** U.S. Centers for Disease Control. 2020. [www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/clean-disinfect-hygiene.html](http://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/clean-disinfect-hygiene.html)
- ***Green Cleaning and Healthy Products for Schools.*** Healthy Schools Network's collaborative website featuring posters, free customizable training, tip-sheets for schools and communities, and access to green cleaning products lists. [www.healthyschools.org/Cleaning-For-Healthy-Schools](http://www.healthyschools.org/Cleaning-For-Healthy-Schools)
- ***Interim Cleaning and Disinfection Guidance for Primary and Secondary Schools for COVID-19*** New York State Departments of Health and Education. 2020. [www.nysed.gov/common/nysed/files/programs/coronavirus/nysed-covid-19-first-guidance-3-9-20.pdf#page=16](http://www.nysed.gov/common/nysed/files/programs/coronavirus/nysed-covid-19-first-guidance-3-9-20.pdf#page=16)
- ***Responsible Purchasing Guidance on Cleaners and Disinfectants.*** Responsible Purchasing Network. [www.responsiblepurchasing.org/purchasing\\_guides/cleaners/index.php](http://www.responsiblepurchasing.org/purchasing_guides/cleaners/index.php)
- ***Safer Cleaning, Sanitizing and Disinfecting Strategies to Reduce and Prevent COVID-19 Transmission.*** University of Washington School of Public Health. 2020. [https://osha.washington.edu/sites/default/files/documents/FactSheet\\_Cleaning\\_Final\\_UWDEOHS\\_0.pdf](https://osha.washington.edu/sites/default/files/documents/FactSheet_Cleaning_Final_UWDEOHS_0.pdf)
- ***Safety Measures When Using Disinfectants.*** Toxic Use Reduction Institute. [www.turi.org/Our\\_Work/Cleaning\\_Laboratory/COVID-19\\_Safely\\_Clean\\_Disinfect/Safety\\_Measures\\_When\\_Using\\_Disinfectants](http://www.turi.org/Our_Work/Cleaning_Laboratory/COVID-19_Safely_Clean_Disinfect/Safety_Measures_When_Using_Disinfectants)
- ***Webinar: Disinfecting and Schools: Expert Panel Discussion.*** Hosted by Healthy Schools Network. August 28, 2020. <https://drive.google.com/file/d/1RIkbva6EnzrIQFFxZaUBeMkoVY5z5hz/view>
- ***Healthy Green Schools and Colleges Guidelines for COVID-19 Cleaning and Disinfection.*** Green Seal. 2020. [www.healthygreeschools.org/resources/guidelines-for-covid-19-cleaning-and-disinfection/](http://www.healthygreeschools.org/resources/guidelines-for-covid-19-cleaning-and-disinfection/)

following active ingredients: hydrogen peroxide, ethanol, citric acid and lactic acid. Avoid products with added fragrances, which can trigger asthma attacks.

Several organizations have culled through List N to develop a subset of asthma-safe disinfectants. Examples include the Massachusetts Toxics Use Reduction Institute (TURI), Green Seal, and the Responsible Purchasing Network. In addition, EPA's Design for Environment

(DfE) program has published its list of approved active ingredients identified several products that qualify for the DfE Logo for Antimicrobial Products.

## 5. Use disinfectants properly.

Here are some guidelines:

- Pre-clean surfaces before applying an effective disinfectant.
- Do not use cleaning and disinfecting products near students and do not let students use the products per CDC guidelines. Disinfectant labels similarly warn that children should not use these products—including disinfecting wipes.
- Wear personal protective equipment (PPE), including gloves and sometimes goggles, when applying disinfectants. Ensure adequate ventilation, including open windows, when using disinfectants.
- Use disinfecting wipes selectively. Wipes not only are more expensive than disinfectants applied with a washable cloth, they also may not provide enough chemical to a surface to be effective, especially if the wipes start to dry out.

In addition, disinfecting wipes can clog septic systems and generate a significant amount of waste. Moreover, surface disinfecting wipes can easily be confused with hand sanitizing wipes, but they are unsafe to use on hands.

- Do your homework. Always read the complete EPA-approved label (as well as the manufacturer's instructions) to ensure that the disinfecting product is being properly prepared, applied for the required "dwell" (or surface contact) time, and rinsed or wiped off, if necessary. Verify claims made by salespeople about the efficacy of the disinfectant chemical or device.

To access the EPA-approved label for a surface disinfectant online, enter the EPA Registration number, which is required to be printed on the bottle, into the EPA's Pesticide Product Label System (PPLS) website at [www.epa.gov/pesticide-labels/pesticide-product-label-system-ppls-more-information](http://www.epa.gov/pesticide-labels/pesticide-product-label-system-ppls-more-information).

- Avoid using foggers and misters to apply disinfectants. Most disinfectants are designed to be used in trigger sprayers and are not approved by EPA for use in other application devices because they may not apply enough disinfectant to stay wet on surfaces long enough to work effectively.

Moreover, these devices are expensive and can expose cleaning staff and building occupants to high concentrations of chemical vapors that can be easily inhaled into the lungs. There is no evidence that spraying disinfectants from foggers, misters, or aerosol cans will kill the viruses in the air.

## 6. Implement a districtwide comprehensive green cleaning program.

Consider these elements when developing and implementing the program :

- Adopt a green cleaning policy that calls for the use of certified low-toxicity cleaning products, safer disinfectants and microfiber mops and cloths, HEPA-filtered vacuums, walk-off mats, and more. The policy should prohibit teachers and students from bringing cleaners and disinfectants from home.
- Devise and implement—and update as needed—green cleaning and safer disinfecting procedures. Include a plan that details which surfaces need to be cleaned (e.g., floors) versus those that need both cleaning and disinfecting (e.g., high-touch surfaces).
- Provide and require regular training in proper cleaning and disinfecting.
- Be prepared for supply chain disruptions. Identify multiple vendors of the green cleaners and safer disinfectants you plan to use regularly. Have at least a three-month supply on hand so you're not forced to scramble to find the products you approved for use in the district or buy whatever conventional cleaning products you can find at the time.
- Keep up with the science. Continue to monitor guidance from the CDC, EPA, state health departments, and other authoritative bodies about best practices for preventing COVID-19 outbreaks in your district.
- Solicit feedback from custodial workers and monitor your vendors' compliance, then address questions or concerns as they arise.

Don't forget to toot your horn. Publicize your green cleaning accomplishments so you can get credit for your efforts and serve as a model for your community and other districts.

## References

Rutala, W.A., Gergen, M.F., and Weber, D.J. "Microbiologic Evaluation of Microfiber Mops for Surface Disinfection." *American Journal of Infection Control*. 35(9): 569-73.

U.S. Centers for Disease Control. 2019. *Fact Sheet: Cleaning and Disinfecting in School Classrooms*. [www.cdc.gov/coronavirus/2019-ncov/downloads/community/schools-childcare/cleaning-disinfecting-school-classrooms.pdf](http://www.cdc.gov/coronavirus/2019-ncov/downloads/community/schools-childcare/cleaning-disinfecting-school-classrooms.pdf).

---

**Alicia Culver** is executive director of the Responsible Purchasing Network. Email: [alicia@responsiblepurchasing.org](mailto:alicia@responsiblepurchasing.org)

**Claire Barnett**, executive director of the Healthy Schools Network, contributed to the article. Email: [cbarnett@healthyschools.org](mailto:cbarnett@healthyschools.org)