

ADDRESSING INFECTIOUS DISEASE SPREAD IN ELEMENTARY SCHOOLS

BobrickPure Hygiene Solutions: More Powerful Than Filters and Purifiers

Elementary school children harness their high energy levels by working hard and playing hard. In addition to learning to read and write, they learn to collaborate and share. Unfortunately, sharing often includes unwanted germs and infectious diseases as they hug, touch, laugh and sneeze with one another.

As a result, the level of infections among children rises when they are back to school, a trend that continues throughout the school year.

According to [National Jewish Health](#), “back-to-school is widely recognized in the medical community as a time when many children pick up respiratory viral infections from their classmates.” As the COVID-19 pandemic continues, we have seen highly contagious variants emerge that affect higher rates of children than previously seen with SARS-CoV-2.

An October 2021 article “Study finds kids to be potential spreaders of COVID-19 and emerging variants” in [The Harvard Gazette](#) cites the following:



By studying 110 children aged two weeks to 21 years who tested positive for COVID-19 at Massachusetts General Hospital (MGH) or urgent care clinics, researchers confirmed earlier findings that infants, children and adolescents are equally capable of carrying high levels of live, replicating SARS-CoV-2 in their respiratory secretions.

...Most children are asymptomatic or only mildly symptomatic when they develop COVID-19, giving the misconception that children are less infectious.

Hidden Infection

According to a paper produced by Health Service Executive titled [Management of Infectious Disease in Schools](#), infection is defined as:

Microorganisms, also known as germs, are tiny living organisms that cannot be seen by the naked eye. Germs can be found in many different places, some live in the environment, some in animals and others in humans. These germs fulfill many important functions and their presence in the human body is necessary for health. Some germs, however, can cause infection. Infection develops when germs which do not usually inhabit the human body gain access, multiply and invade human tissue resulting in signs and symptoms of infection (e.g., redness, heat, swelling, fever).

Until now, frequent handwashing was the simple solution to avoiding infection in schools. However, wrangling children to wash their hands frequently is not an easy task.

The Bobrick Solution

For superintendents, principals and facilities managers meeting the hygiene needs of elementary schools can seem like an almost impossible task.



There is good news. Independent studies show that Bobrick's PureDri and PureSphere neutralize 98.11% of airborne and 99.6% of surface microorganisms.

The Bobrick PureDri Sanitizing Hand Dryer provides sanitization in spaces up to 215 square feet; the PureSphere Air Sanitizer provides sanitization in spaces up to 323 square feet. Visible labeling on both units—whether in restrooms, classrooms, gyms or auditoriums—provides added confidence to teachers, parents and students, letting them know extra precautions are being taken to enhance safety and sanitization.

Pure Hygiene Solutions Technology—How it Works

PureDri and PureSphere technology works by destroying existing microorganisms from bacteria and viruses in the air and on surfaces. PureDri is an enhanced restroom hand-drying process that provides continuous sanitization in a closed space of up to 215 square feet.

PureSphere, on the other hand, is an air sanitizer that mounts to a wall and neutralizes viruses and bacteria <0.03 microns in areas up to 323 square feet, such as kitchens, break rooms and private meeting spaces. In addition, the unit works to remove odors, eliminating the need for masking agents.

PureDri and PureSphere operate using a three-step process:

1. Eliminates viruses and bacteria via a germicidal UV lamp that inactivates all microorganisms
2. Neutralizes viral particles through strong oxidizing agents built into the equipment
3. Sanitizes using superoxide ions that neutralize airborne particles

The following graphic depicts the three-part process

1. GERMICIDAL UV

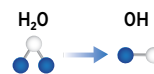
As air flows through the plasma chamber and over the UV lamp, all microorganisms in the air are killed/inactivated.

The plasma chamber is comprised of dual waveband UV lamps at 254nm and 185nm surrounded by nano-coated catalytic plates.



2. HYDROXYL RADICALS

As air flows through the chamber, the UV light reacts with the titanium dioxide catalysts causing water vapor to be converted to highly reactive hydroxyl radicals (OH).



3. SUPEROXIDE IONS

As air flows through the chamber, the UV light reacts with the titanium dioxide catalysts causing a release of free electrons, which bond with oxygen to form superoxide ions.



More Than Simple Filtration

Until now, HEPA's ability to purify air has served as the standard of filtration. But while HEPA filtration simply blocks particles 0.3 microns and larger, UV light inactivates all microorganisms by destroying nucleic acids and disrupting their DNA. The clinically backed science of BobrickPure Hygiene Solutions offers greater effectiveness and maintenance benefits that HEPA filtration can't match, neutralizing particles as small as 0.0001 microns. By destroying particles that are smaller than 0.3 microns, including dust, bacteria, tobacco smoke, mold spores, odors, infectious particles and pathogens, both the PureDri Sanitizing Hand Dryer and PureSphere Air Sanitizer are more effective than HEPA filtration.

In addition, HEPA filters lose their effectiveness when clogged with debris, and only those labeled washable or permanent can be cleaned. During virus outbreaks, appropriate sourcing and installation of HEPA filtration

to achieve negative pressure isolation can be tedious and time consuming. Care must be taken during cleaning to avoid damaging the filter or breaking or stretching out the fibers, which happens all too easily. [[Airborne Infectious Disease Management: Methods for Temporary Negative Pressure Isolation, Minnesota Department of Health, Office of Emergency Preparedness, Healthcare Systems Preparedness Program](#)]

These issues do not plague BobrickPure Hygiene Solutions as they do HEPA filtration devices.

Ease of Use While Promoting Safety and Wellness

- **PureDri Hand Dryer**
 - Touch-free hand-drying function
 - 20-second drying window
 - Hand sanitization
 - Immediately following dry time, a 6-second blast of super-concentrated ionized air sanitizes hands
- **PureSphere Room Sanitizer**
 - Sanitizes up to 323 square feet
 - Provides odor control and purifies 24/7
 - No filters to change

Results of Independent Studies

The effectiveness of both PureDri and PureSphere was determined by three independent research organizations in the United Kingdom – the Health Protection Agency, SGS and University of Leeds. The findings showed the neutralization of a variety of bacteria and viruses.

The results are as follows:

- 100% air disinfection and elimination of Escherichia coli, Staphylococcus aureus and Aspergillus fumigatus after 1 hour
- Surface disinfection and bacteria elimination achieved high results after 8, 24 and 48 hours

Air and Surface Testing Against Listed Pathogens

Air Disinfection Efficacy

| Pathogen | 1 hour |
|--------------|--------|
| E. coli | 100% |
| S. aureus | 100% |
| A. fumigatus | 100% |

Surface Disinfection Efficacy

| Pathogen | 8 hours | 24 hours | 48 hours |
|--------------|---------|----------|----------|
| E. coli | 79.6% | 97.7% | 99.9% |
| S. aureus | 87.4% | 91.1% | 99.5% |
| C. difficile | 91.4% | 98.1% | 99.6% |

Technical Specifications

PureDri Technical Specifications

| | |
|---------------------|------------------------------------|
| Dimensions | 10.5" wide x 32.25" high x 4" deep |
| Weight | 20.3 pounds |
| Electrical Supply | 110/240 volts 50/60 Hz |
| Current Consumption | 17 Amps @ 115 volts |
| Normal Output | 0.2 kW |
| Air Volume | 1,200 cubic feet / hour |
| Air Velocity | 164 feet / second @ 4" |
| Area Size | 215 square feet |

PureSphere Technical Specifications

| | |
|--------------------------|----------------------------------|
| Dimensions | 5.5" wide x 15.5" high x 4" deep |
| Weight | 3 pounds |
| Electrical Supply | 110/240 volts 11.5-13 watts |
| Area Size (Model B-9210) | Sanitizes up to 323 square feet |
| Cover material | Polycarbonate |
| Cover color | Silver |

The Bobrick**Pure** Hygiene Solutions Value Proposition

The revolutionary UV+ technology of PureDri and PureSphere creates hygienic air and surfaces to promote wellness and safety. The safety seal that is included with the installation of PureDri and PureSphere products shows parents that their children are surrounded by an environment safe from most bacteria and viruses and provides an added sense of safety to teachers.

Hygiene & Wellness | Safety | Clean Environments

Bobrick**Pure** Hygiene Solutions are making the world a safer, more hygienic place, one space at a time.

Visit [BobrickPure.com](https://www.bobrickpure.com) for additional resources

