

## Focus on Education

*The purpose of this document is to address mitigation of pathogens in educational institutions. Included settings are primary, middle, high schools, colleges, and universities. Please reference the paper “Focus on Mitigation of Germs on Surfaces and Hands” for a discussion of My-Shield® nano bond polymer technology”.*

## Education

Students, faculty, and non-faculty employees are all exposed to pathogens that may be transmitted by contact with contaminated surfaces, objects, and hands. Highly contagious diseases are of special concern due to the potential rapid spread of infections in the high-density populations of schools. COVID-19 brings into sharp focus the need for enhanced mitigation strategies for all potential COVID-19 environmental exposure risks. This paper discusses traditional sanitation measures and the benefits of My-Shield® nano bond polymer technology.

## Risk Factors for Students and Faculty

- Large student populations
- Hands
- Sick students attending school
- Non-symptomatic students and employees
- High traffic touch points
- Cell phones
- Desks used by multiple students each day
- Bathrooms
- Crowded cafeterias
- School buses
- Lockers and athletic locker rooms
- Weight rooms/strength and conditioning equipment
- Wrestling mats
- Gymnasiums and other athletic facilities



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## **Standard Sanitization Measures**

Public and private school systems, colleges, and universities usually employ professional janitorial services. Cleaning usually includes some measure of sanitation for classrooms, bathrooms, common areas, and athletic facilities. Spot disinfection of high touch points and bathrooms is usually performed daily. Comprehensive disinfection is more infrequent and has great variance according to different school protocols.

## **Cleaning/Sanitizing by School Employees**

Faculty and other school employees also use a variety of disinfecting products to sanitize desks, doorknobs, bathrooms, cafeteria tables, and other objects of concern. This includes products provided by the school or brought from home. Brands utilizing alcohol, chlorine, peroxide, or a mixture of chemicals may be selected. Stronger commercial grade products utilizing a blend with quaternary ammonium compounds may carry health warnings for exposure to skin and fumes. Non-cleaning professionals usually are unaware of these risks. Disinfecting wipes are easy to use and popular but may also carry hazards to skin. Faculty and non-faculty employees are also often not aware of required dwell times for full disinfection.

## **Conventional Disinfectants**

The lack of comprehensive infection control plans results in tremendous variations and inconsistencies in the effort to mitigate exposure to surfaces/fomites and hands. Variances in frequency of application with professional services and the reliance on faculty and staff all play a significant part of this problem. Human Coronaviruses may persist on hard surfaces for up to 9 days.

Conventional disinfectants provide strong bactericidal/viricidal kill rates but have no lasting protection after drying. Chemical agents such as alcohol and peroxide kill pathogens while wet but have no effective protection once dry. This means a school desk sanitized each evening can be contaminated by the first student touching it the next day. Furthermore, these conventional chemical agents are often wiped off before their full dwell time, which prevents them from sanitizing the surface properly. The question must be, how can round the clock protection

be applied to the school desk or other objects? The technology answer is Nano Bond Composite Polymers.

### **My-Shield® Surface Disinfectants – Nano Bond Polymer Disinfectant**

*My-Shield® Broad Spectrum* and Hospital nano polymer disinfectants, are water based and EPA approved. Both achieves kill rates equivalent to commercial grade disinfectants. Antimicrobial effect starts within seconds of application. Bactericidal and viricidal action occurs while wet and continues while dry.

All levels of education can treat porous and non-porous surfaces with this disinfectant that continues protection from bacteria and viruses once dry. Persistence can last up to 28 days and COVID-19 to 30 days and beyond. Kill claims and persistent effect claims are all demonstrated in clinical studies and available by request. The school desk treated the prior night is still protected the next day and for some time beyond application.

Please reference kill rates and persistence claims on Table 1 of the table “*Focus on Mitigation of Germs on Surfaces and Hands*”.

### **Hand Sanitizers**

School systems, colleges, universities, and trade schools typically have not emphasized the benefits of using hand sanitizers. In this age of COVID, trying to enforce policies dictating the use of such products would be an infringement on rights of students and would be rejected by a large percentage of parents. For the above reasons, the use of hand sanitizers is left up to student and faculty populations. Often schools have hand sanitizer dispensers that may be used on a voluntary basis. The importance of frequent hand washing is also left up to the individual.

Transmission of bacterial and viral infections through hands is an important risk factor that needs to be part of any infection control plan. Once again, the on-going COVID-19 pandemic demands attention to mitigating the spread of infections through hands. Infection control plans should emphasize education for students with frequent reminders to wash hands and use hand sanitizers.

Alcohol Based hand sanitizers are effective at killing bacteria and viruses. Ethyl and Isopropyl alcohol formulations approved by the FDA are harmful to skin with



frequent and prolonged use. The primary negative effects of alcohol include drying out of hands and cracking. Alcohol hand sanitizers kill pathogens while wet but have no lasting protection once dry. This means students, faculty, and other school employees can contaminate their hands minutes after applying alcohol hand sanitizers. This fact exposes a major limitation of traditional hand sanitizers in the fight to mitigate exposure to infectious diseases.

### **My-Shield® Hand Sanitizer – Nano Bond Polymer Sanitizer**

My-Shield® hand sanitizer is an FDA registered, alcohol-free, water-based formulation that utilizes the same nano bond polymer that provides a protective antimicrobial coating on hands. This protective coating continues to provide protection up to 24 hours with a high level of protection 4 to 8 hours after application. Kill rates are equivalent to alcohol without the side effects of damaging skin. The addition of Aloe Vera to the foaming or gel formulations helps to soften skin.

Kill claims include a rate of 99.99% with a 99.9% kill rate for COVID-19 at 30 seconds. Please reference claims on Table 1 of the document “Focus on Mitigation of Germs on Surfaces and Hands”.

School systems placing My-Shield hand sanitizer dispensers in high traffic areas can take an important step towards preventing the spread of infectious diseases through hands. Students and faculty that apply My-Shield at the start of the day can maintain a high level of antimicrobial protection on their hands for the entire day. This is not possible with alcohol sanitizers.

### **Recommended Products for Education/School Systems**

- My-Shield® Broad Spectrum Disinfectant
- My-Shield® Hospital Disinfectant
- My-Shield® Hand Sanitizer
- My-Shield® Laundry Complete for athletic uniforms
- My-Shield® Topical Antiseptic for infirmaries

### **Summary**

***My-Shield® with Zetrisil® nano bond polymer coatings is the technology breakthrough needed for long lasting disinfection.***