



**Town of Arlington
Facilities Department**

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To: Kathleen Bodie, Superintendent

Cc: Michael Mason, CFO

Re: District-wide Ventilation Update / Sanitizer Information

Date: August 28, 2020

Ventilation Equipment

This memorandum serves to provide an update on the status of the Facilities Department's tireless and ongoing effort to inspect, test, re-commission and repair as necessary, each and every piece of HVAC equipment that provides for ventilation in our District's school buildings. Facilities personnel have been working through this unprecedented and monumental task with the assistance of multiple 3rd party vendors. Included is both equipment providing fresh-air ventilation, as well as mechanical equipment providing exhaust ventilation. This equipment is tasked not only with supporting occupant comfort, but also controlling indoor air quality. Fresh-air ventilation serves to reduce the concentration of contaminants in the occupied zones of buildings via the introduction of outside air, while exhaust ventilation serves to remove stale air containing the byproducts of respiration and other potential building-related pollutants and odors. These systems work in tandem to create designed pressure differentials and predictable air flows within buildings to deliver a comfortable learning and working environment.

The attached spreadsheet lists the equipment at each of the school buildings, and the locations served. For the purposes of this HVAC equipment log, exhaust fans are treated as a single system despite there being numerous pieces of similar equipment atop each structure aimed at achieving the same goal. A description of the locations served by the various pieces of air-handling equipment is also provided. Next, the results of the initial equipment test are provided, followed by a current status. Many repairs have been completed to date, and more are occurring each day as replacement parts are obtained. Projected completion dates are also provided for outstanding repairs. General notes are highlighted. Not fully illustrated therein is the level of effort involved- the fact that equipment was disassembled to observe proper operation, lubricated, exercised, vacuumed and cleaned, in addition to being tested, troubleshooted, and returned to operation as originally intended. Adding to the complexity, as school districts far and wide undergo similar undertakings, the sourcing of scarce replacement parts for similar types of equipment has become increasingly challenging and time-consuming.

This systematic review of equipment has made clear that historically the Facilities Department has primarily responded to and addressed thermal comfort complaints, not necessarily air quality concerns. In fact, building occupants often times seek to reduce the introduction of outside air into spaces outside of the shoulder seasons. Current global conditions have changed that focus. Never has such an emphasis been placed on ventilating spaces, and rightfully so, in order to reduce risks from potential airborne contamination. Although such a thorough overhaul is incredibly time- and labor-intensive, it is not only warranted under current circumstances, but will serve the District well in providing better indoor air quality more generally moving forward.

Further, Facilities personnel are working directly with Principals to identify any areas of buildings not served by mechanical ventilation that should not be programmed for student activities in the current climate. Due to ventilation codes and standards these spaces are rare

within school buildings, but do result over time as burgeoning occupancy forces subdivision of areas, or repurposing of areas originally designed for storage, for example.

A snapshot of the rapidly changing state of the current equipment condition at each building as of the writing of this memo follows:

Hardy School	7/12 Systems Fully Operational
Bishop School	31/32 Systems Fully Operational
Brackett School	5/5 Systems Fully Operational
Peirce School	37/39 Systems Fully Operational
Dallin School	36/41 Systems Fully Operational
Thompson School	7/7 Systems Fully Operational
Stratton School	40/40 Systems Fully Operational
Gibbs School	11/11 Systems Fully Operational
Ottoson Middle School	84/89 Systems Fully Operational
Arlington High School	24/34 Systems Fully Operational <i>*Only 34 systems evaluated to date; prioritization of systems serving classroom spaces</i> <i>*Multiple systems returned to operation at time of evaluation</i>

Equipment Control Strategies

The American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) is a global organization serving as preeminent authority developing standards and guidelines for building design and operation. In fact, ASHRAE Standard 62.1 is the design standard that school building ventilation systems are based upon when they are constructed. ASHRAE has also taken a leading role during the current crisis by offering equipment control

strategies to building operators. These controls strategies can be layered along with other response measures, and are aimed at mitigating potential risks associated with occupying buildings.

Some strategies apply to all buildings, including scheduling all mechanical ventilation equipment to run two hours prior to occupancy, and for at least two hours post occupancy, preferably four hours. This measure serves to ‘flush’ the air in the building as well as allow for additional filtration to occur, and is easily implement via the respective Building Automation System (BAS). Bathroom exhaust fans can also be put on extended run time, or even continuous run, to reduce lingering aerosol concerns.

More nuanced strategies pertain to the control of specific types of HVAC equipment, mainly more modern equipment intended to reduce energy usage. Generally speaking, most strategies aimed at increasing fresh air ventilation are at odds with more recent trends to achieve tighter, more energy efficient buildings. Outside air, save for certain times of the year, needs to be conditioned for thermal comfort. The need to continuously condition outside air with a greater temperature differential from the desired space conditions (mostly heating during the school year) requires not only more equipment run-time, but more run-time at a higher (full-load) capacity. Modern equipment can modulate to meet demand in order to save energy. Here, the prevailing strategy is to temporarily decommission energy recovery wheels to reduce potential cross contamination opportunities between air intake and exhaust. These particular systems components are only in place at the Thompson, Gibbs and Hardy Addition), and are readily disabled.

Ventilation equipment can also be controlled via sensors that detect Carbon Dioxide (CO₂). Such a strategy is known as Demand Controlled Ventilation (DCV). In essence, the space provides direct feedback to the HVAC equipment via a sensor placed in the return air duct. As detected CO₂ rises, so too does the ventilation rate, and vice versa. Again, these systems help

reduce energy consumption and are more common in larger places of assembly, such as gyms and cafeterias. Such spaces see programmed periods of significant occupancy, followed by periods of minimal activity; however, this type of control mechanism can also be applied to classrooms to increase ventilation above minimum levels. Regularly the largest pieces of HVAC equipment on site, this equipment is capable of handling significant amounts of air in short periods of time. DCV is present in the following areas: Gibbs Auditorium, Media Center and Cafeteria, Peirce Cafeteria, Dallin Gym and Cafetorium, Stratton assembly spaces and classrooms. The programmed set-points can be temporarily overridden within the BAS, allowing for significantly increased ventilation rates in these spaces, as well as adjoining common spaces if doors are opened.

Ventilation Rates

Each school building houses equipment of varying types, sizes, and vintages, though there are many similarities between certain system designs. Generally speaking, newer buildings are equipped with Dedicated Outdoor Air Systems (DOAS), including Thompson, Gibbs and the Hardy Addition, while many older buildings use a combination of tried and true cabinet unit ventilators and roof-top units that deliver mixtures of outdoor air and conditioned air.

Here, in terms of ventilation, it is worth noting that each school building is designed and constructed in accordance with the version ASHRAE Standard 62.1 in effect at the time of design. The Standard and its application are updated periodically, but buildings constructed or majorly renovated in the past 30 years achieve approximately the same *minimum* outside air ventilation rate: 15 cubic feet per minute (CFM) per occupant. The corresponding equipment installed to provide for this outside air ventilation is sized according to at least the designed maximum occupant loading of the room; therefore, any reduction in room capacity per social distancing guidelines necessarily increases the amount of CFM of fresh air per person. More specific information regarding ventilation rates is forthcoming.

Disinfection Equipment

The Facilities Department has increased its fleet of electrostatic spray equipment considerably, adding a number of Professional Cordless Electrostatic Handheld Sprayers from Victory Innovations (demo videos available at Victorycomplete.com). This past spring, and for a few years prior, the Facilities Department has also deployed a Cordless Roller Cart Electrostatic Disinfectant Spray from EMist (emist.com/em360-rollercart/).

These tools provide for a more efficient and efficacious delivery of our trusted disinfectants while rooms are unoccupied. The Facilities Department deploys 3 separate disinfectant products based upon the application or use. In the electrostatic sprayers, we use a product from Buckeye International–ECO pH Neutral Disinfectant E23. This product in particular has been in use across the District since 2013, and was widely used in response to the current crisis while school was in session in March. The Custodial team also uses SC Johnson Professional TruShot disinfectant as well as Bioesque Botanical Disinfectant Solution. Manufacturer product literature is enclosed for your review. This information includes information pertaining to product effectiveness against human coronaviruses.



Neutral Disinfectant

Product Reorder Number



Buckeye Eco Neutral Disinfectant is a multi-purpose, neutral pH, broad-spectrum germicidal detergent designed for use in hospital, healthcare and industrial settings at ½ oz. and 2 oz. per gallon of water. Buckeye Eco Neutral Disinfectant is ideal for routine germicidal cleaning and floor care maintenance. With a use-dilution pH of 7.0 ± 0.2 , Buckeye Eco Neutral Disinfectant will not attack floor finish.

Special detergents effectively remove dirt and soil without harming the finish. Buckeye Eco Neutral Disinfectant requires no rinsing. This means more time may pass between labor intensive stripping and recoating procedures.

Use Buckeye Eco Neutral Disinfectant on most hard, nonporous surfaces in:

Nursing Homes
Hospitals
Healthcare Facilities
Schools and Colleges
Office Buildings
Public Facilities
Hotels
Exercise Facilities



FEATURES

- 1 minute contact time for Human Coronavirus
- 2 minute contact time for Influenza Virus Type A
- 4 minute contact time for HIV-1 (AIDS virus)
- Disinfectant
- Bactericidal
- Virucidal*
- Fungicidal
- Mildewstatic
- EPA registered
- Disinfects, cleans, and deodorizes in one labor-saving step
- pH neutral
- Effective in hard water up to 200 ppm [calculated as CaCO_3] in the presence of a moderate amount of soil [5% organic serum] according to the AOAC Use-Dilution Test
- Use on hard, nonporous surfaces

Effectively kills: • HIV-1 (AIDS Virus) • Hepatitis B Virus (HBV) • Hepatitis C Virus (HCV) • Herpes Simplex Virus Type 1 & 2 • Rubella Virus • Influenza A Virus/ Hong Kong • Vaccinia • Adenovirus • Vancomycin resistant *Enterococcus faecalis* (VRE) • Methicillin resistant *Staphylococcus aureus* (MRSA) • Community Associated Methicillin-Resistant *Staphylococcus aureus* (CA-MRSA) • Gram-negative & Gram-positive pathogens • *Trichophyton* Mentagrophytes (Athlete's Foot Fungus)

EPA REG. NO. 47371-129-559
EPA EST. NO. 559-MO-1

1.25 L Bag Yield Rate

½ oz./gal. (1:256) makes 84 end-use gallons, which is equivalent to:



Each 4x1 case makes 339 end-use gallons

2 oz./gal. (1:64) makes 21.5 end-use gallons, which is equivalent to:



Each 4x1 case makes 343 end-use quarts

0.95 L Squeeze & Pour Yield Rate

½ oz./gal. (1:256) makes 64 end-use gallons, which is equivalent to:



Each 6x1 case makes 386 end-use gallons

2 oz./gal. (1:64) makes 16.3 end-use gallons, which is equivalent to:



Each 6x1 case makes 390 end-use quarts

RESEARCH FACTS

Antimicrobial Test Results

Claim:	Contact Time:	Organic Soil:	Water Conditions:
Disinfectant	10 minutes	5%	200 ppm as CaCO ₃
Test Method:	EPA Approved Method		

Organism	ATCC#	Use-Dilution Concentration
Acinetobacter baumannii	BAA-1709	660 ppm (½ oz./gal.)
Acinetobacter calcoaceticus	23055	660 ppm
Bordetella bronchiseptica	31427	660 ppm
Chlamydia psittaci	VR-854	660 ppm
Enterobacter aerogenes	13048	660 ppm
Enterobacter cloacae	13047	660 ppm
Enterobacter cloacae NDM-1	CDC1000654	660 ppm
Enterococcus faecalis - Vancomycin Resistant (VRE)	51299	660 ppm
Escherichia coli	11229	660 ppm
Escherichia coli NDM-1	CDC1001728	660 ppm
Fusobacterium necrophorum	27852 25286	660 ppm
Klebsiella pneumoniae	4352	660 ppm
Klebsiella pneumonia ¹ NDM-1	BAA-2473	660 ppm
Legionella pneumophila	33153	660 ppm
Listeria monocytogenes	15313	660 ppm
Pasteurella multocida	12947	660 ppm
Proteus mirabilis	9240	660 ppm
Proteus vulgaris	9920	660 ppm
Salmonella enterica	10708	660 ppm
Salmonella enteritidis	13076	660 ppm
Salmonella typhi	6539	660 ppm
Serratia marcescens	14756	660 ppm
Shigella flexneri	9380	660 ppm
Shigella sonnei	25931	660 ppm
Staphylococcus aureus	6538	660 ppm
Staphylococcus aureus ¹ (MRSA)	33592	660 ppm
Staphylococcus aureus ¹ (MRSA) Community Associated	(NRS 384) USA300	660 ppm
Staphylococcus aureus ¹ (MRSA) Community Associated	(NRS 123) USA400	660 ppm
Staphylococcus aureus ² (VISA)	CDC No. HIP-5836	660 ppm
Staphylococcus epidermidis ¹ (MDR) Multi-Drug Resistant	12228	660 ppm
Streptococcus pyogenes	19615	660 ppm
Pseudomonas aeruginosa	15442	660 ppm
Pseudomonas aeruginosa ¹ (MBL)	CDC 2012059	660 ppm

Conclusion: Buckeye Eco Neutral Disinfectant demonstrated efficacy against the listed bacteria as specified in the test performance standards. The formulation meets EPA requirements for hard surface disinfectant claims when diluted as directed.

Claim:	Contact Time:	Organic Soil:	Water Conditions:
Mildewstat	10 minutes	5%	200 ppm as CaCO ₃
Test Method:	EPA Approved Method		

Organism	ATCC#	Use-Dilution Concentration
Aspergillus niger	6275	660 ppm (½ oz./gal.)

Conclusion: Buckeye Eco Neutral Disinfectant demonstrated efficacy as a mildewstat against the above organism as specified in the test performance standards.

Claim:	Contact Time:	Organic Soil:	Water Conditions:
Citrus Canker Disease Control	10 minutes	5%	Deionized
Test Method: EPA Approved Method			
Organism		Use-Dilution Concentration	
Xanthomonas axonopodis (Pathovar citri) (USDA Permit No. 46190)		2000 ppm (5oz. per 3¼ gallons)	

Claim:	Contact Time:	Organic Soil:	Water Conditions:
Fungicide	10 minutes	5%	200 ppm as CaCO ₃
Test Method:	EPA Approved Method		

Organism	ATCC#	Use-Dilution Concentration
Trichophyton mentagrophytes	9533	660 ppm (½ oz./gal.)
Candida albicans	11651	660 ppm

Conclusion: Buckeye Eco Neutral Disinfectant demonstrated fungicidal efficacy against the above organisms as specified in the test performance standards.

¹ Antibiotic-resistant strain

² Reduced Susceptibility to Vancomycin

Claim:	Contact Time:	Organic Soil:	Water Conditions:
Virucide	Varies	5%	200 ppm as CaCO ₃
Test Method:	EPA Approved Method		

Organism	Source of Virus or ATCC#	Use-Dilution Concentration	Contact Time
Adenovirus Type 4	VR-4 strain RI-67	660 ppm (½ oz./gal.)	10 Min.
Adenovirus Type 7	VR-7	2640 ppm (2 oz./gal.)	10 Min.
Hepatitis B (HBV)	Duck Hepatitis B Virus (Hepadna Virus Testing, Inc.)	660 ppm	10 Min.
Hepatitis C (HCV)	Bovine Viral Diarrhea Virus (BVDV-CPE)	660 ppm	10 Min.
Herpes Simplex Type 1	VR-733	660 ppm	10 Min.
Herpes Simplex Type 2	MS Strain	660 ppm	10 Min.
HIV-1 (AIDS Virus)	HTLV-III _{RF} strain	660 ppm	4 Min.
Human coronavirus	VR-740 Strain 229E	660 ppm	1 Min.
Influenza A Virus	VR-544 Strain Hong Kong	660 ppm	2 Min.
Respiratory Syncytial virus (RSV)	VR-26	660 ppm	10 Min.
Rotavirus (WA)	Strain WA	660 ppm	10 Min.
Rubella virus	Strain M-33	660 ppm	10 Min.
SARS Associated Coronavirus (SARS)	CDC Strain #200300592	660 ppm	10 Min.
Vaccinia (Pox virus)	Strain IHD	660 ppm	10 Min.

Conclusion: Buckeye Eco Neutral Disinfectant effectively inactivated the above viruses specified in the test performance standards. The formulation meets EPA requirements for hard surface disinfectant claims when diluted as directed.

Claim:	Contact Time:	Organic Soil:	Water Conditions:
Animal Viruses	10 minutes	5%	200 ppm as CaCO ₃
Test Method:	EPA Approved Method		

Organism	Source of Virus or ATCC #	Use-Dilution Concentration	Contact Time
Avian influenza (H5N1)	Strain VNH5N1-PR8/CDC-RG CDC #2006719965	660 ppm (½ oz./gal.)	10 Min.
Avian polyomavirus	Dr. Bruce Calnek, Cornell University	660 ppm	10 Min.
Canine distemper virus	VR-128	660 ppm	10 Min.
Feline leukemia virus	VR-717	660 ppm	10 Min.
Feline picornavirus (calicivirus)	VR-649	660 ppm	10 Min.
Infectious bovine rhinotracheitis	VR-793	660 ppm	10 Min.
Infectious bronchitis [Avian IBV]	VR-22	660 ppm	10 Min.
Newcastle Disease	VR-108, strain B1, Hitchner or Blacksburg	660 ppm	10 Min.
Pseudorabies virus [PRV]	VR-135	660 ppm	10 Min.
Rabies virus	VR-138	660 ppm	10 Min.
Transmissible Gastroenteritis virus [TGE]	VR-763	660 ppm	10 Min.

Conclusion: Buckeye Eco Neutral Disinfectant effectively inactivated the above viruses specified in the test performance standards. The formulation meets EPA requirements for hard surface disinfectant claims when diluted as directed.

Directions for Use

DIRECTIONS: Disinfects, cleans, and deodorizes the following hard, nonporous, inanimate surfaces: floors, walls, (non-medical) metal surfaces, (non-medical) stainless steel surfaces, glazed porcelain, and plastic surfaces such as polypropylene, polystyrene, etc. Remove heavy soil deposits from surface. Then thoroughly wet surface with a use-solution of ½ ounce of the concentrate per gallon of water or equivalent. (Use 2 oz. per gallon of water to kill Adenovirus Type 7.) The use-solution can be applied with a cloth, mop, sponge, or coarse spray, or soaking. For sprayer applications, use a coarse spray device. Spray 6–8 inches from the surface, rub with a brush, cloth or sponge. Do not breathe spray. Let solution remain on surface for a minimum of 10 minutes. Rinse or allow to air dry. Rinsing of floors is not necessary unless they are to be waxed or polished. Food contact surfaces must be thoroughly rinsed with potable water. This product must not be used to clean the following food contact surfaces: utensils, glassware and dishes. Prepare a fresh solution daily or more often if the solution becomes visibly dirty or diluted.

Connecting 1.25 L Bags to Eco Unit

1. Remove 1.25 L bag from carton.
2. To open the Eco unit product compartment, depress the top of the unit with your fingers and pull the compartment down towards you with your other hand.
3. Align Eco unit connector cap lugs with 1.25 L bag metering plug channels. Rotate clockwise to lock in place.
4. Fit 1.25 L bag neatly into product compartment with hose barb pointed downward.
**Ensure chemical line is not pinched.*
5. Close Eco unit product compartment.

Dispensing Diluted Product into 32 oz. Trigger Spray Bottle

1. Use appropriate 32 oz. trigger spray bottle, and slide up over 5-inch discharge hose.
2. Push back lever to dispense diluted product.
3. Once trigger spray bottle is filled (approximately 2 inches from top), release lever to avoid overfilling.

Dispensing Diluted Product into Mop and Bucket/Other Equipment

1. Position Eco unit discharge hose into mop bucket or other equipment.
2. Press green button below appropriate product to dispense diluted product.
3. For hands-free operation, push the appropriate green button once to dispense diluted product. Once filled, push the button again to stop product flow.

0.95 L Squeeze & Pour Bottles (S23) – User Instructions:

For mop and bucket applications:

Add 1 oz. per prefilled 2 gallons of water

For Eco 32 oz. trigger spray bottle:

Add ½ oz. per prefilled Eco trigger spray bottle of water

Available in:



1.25 L
bags



0.95 L
squeeze
& pour
bottles

Eco Neutral Disinfectant Technical Specifications

pH in concentrate	7.6 ± 0.2
pH 2 oz./gal. (1:64)	6.8 ± 0.2
pH ½ oz./gal. (1:256)	7.0 ± 0.2
Weight/Gallon	8.31 lbs
Specific Gravity	0.998
Color	Forest Green
Fragrance	Lemon Zest
Active Concentration	660 ppm
Active Disinfectant:	
Didecyl dimethyl ammonium chloride.....10.14%	
n-Alkyl (C ₁₄ 50%, C ₁₂ 40%, C ₁₆ 10%)	
dimethyl benzyl ammonium chloride.....6.76%	
Inert Ingredients.....83.10%	

For more information
about E23/S23, scan
this code.



Buckeye International, Inc.

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www.buckeyeinternational.com

Technical Information - United States
February 4, 2020

Coronavirus 2019-nCoV

OVERVIEW

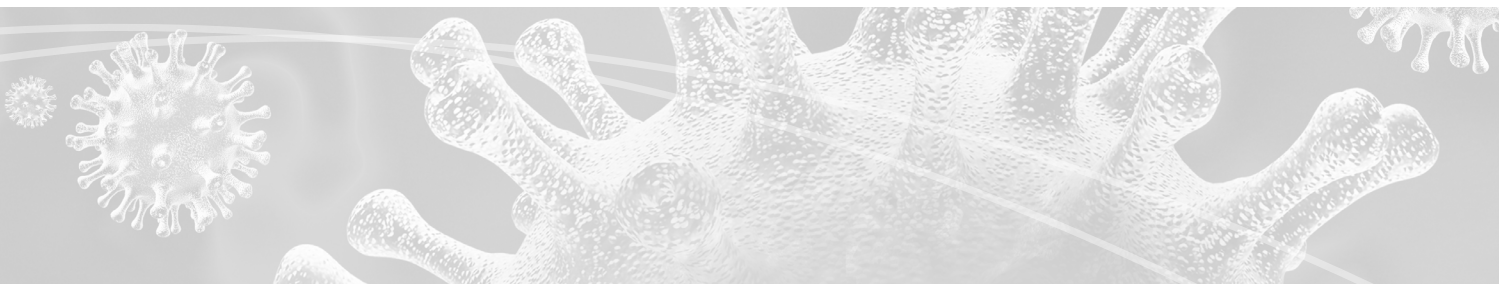
On December 31, 2019, the World Health Organization (WHO) China Country Office was informed of cases of pneumonia of unknown etiology (unknown cause) detected in Wuhan City, Hubei Province of China. A novel coronavirus (2019-nCoV) was identified as the causative virus by Chinese authorities on January 7, 2020.

Coronaviruses (CoV) are 'enveloped viruses' belonging to the subfamily Coronavirinae in the family Coronaviridae that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV).

A novel coronavirus (nCoV) is a new strain that has not been previously identified in humans.

Coronaviruses most commonly spread from an infected person to others through:

- **the air by coughing and sneezing**
- **close personal contact, such as touching or shaking hands**
- **touching an object or surface with the virus on it, then touching your mouth, nose, or eyes before washing your hands**
- **rarely, fecal contamination**



PROTECTION

There are currently no vaccines available to protect against human coronavirus infection. WHO's standard recommendations for the general public to reduce exposure to and transmission of a range of illnesses are as follows, which include hand and respiratory hygiene, and safe food practices:

- **Frequently clean hands by using alcohol-based hand rub or soap and water.**
- **When coughing and sneezing, cover mouth and nose with flexed elbow or tissue - throw tissue away immediately and wash hands**
- **Avoid close contact with anyone who has fever and cough**
- **If you have fever, cough and difficulty breathing, seek medical care early and share previous travel history with your health care provider**
- **When visiting live markets in areas currently experiencing cases of novel coronavirus, avoid direct unprotected contact with live animals and surfaces in contact with animals**
- **The consumption of raw or undercooked animal products should be avoided. Raw meat, milk or animal organs should be handled with care, to avoid cross-contamination with uncooked foods, as per good food safety practices**

Proper Hand Hygiene

As a refresher on proper hand-washing technique using soap and water, please reference our [hand washing video](#). To see SC Johnson Professional hand wash and hand sanitizer options visit our [website](#).

It is important to note that under FDA regulations, it is prohibited to discuss or promote antiviral claims for hand sanitizers or hand cleansers in the United States without a new drug application. SC Johnson Professional hand sanitizers and hand cleansers do not have a new drug application and have not been tested against this strain of coronavirus.

EPA Guidance For Surface Disinfection

The SC Johnson Professional products listed below have demonstrated effectiveness against viruses similar to 2019 Novel Coronavirus (2019-nCoV) on hard, non-porous surfaces. Therefore, the items listed below can be used against 2019 Novel Coronavirus (2019-nCoV) when used in accordance with the directions for use against Norovirus on hard, non-porous surfaces. Refer to the [CDC website](#) for additional information.

SKU #	Product Name	EPA Reg. #	Follow Label Directions against the stated virus (contact time)
689945	TruShot Disinfectant Cleaner - Restroom Cleaner and Disinfectant	6836-348-89900	Norovirus (5 minutes)
689950	TruShot Disinfectant Cleaner - For Hospitals	6836-348-89900	Norovirus (5 minutes)
680068	Quaternary Disinfectant Cleaner	6836-78-89900	Norovirus (10 minutes)

You can learn more about the 2019-nCoV outbreak at [CDC](#) and [WHO](#) websites.



Novel Coronavirus (COVID-19)—Fighting Productsⁱ

The American Chemistry Council's (ACC) Center for Biocide Chemistries (CBC) has compiled a list of products that have been pre-approved by the U.S. Environmental Protection Agency (EPA) for use against emerging enveloped viral pathogens and can be used during the 2019 novel coronavirus (COVID-19) outbreak. This product list is not exhaustive but can be used by business owners, health professionals, and the public to identify products suitable for use against COVID-19.

The information in this document is being provided as a public service. All efforts have been made to ensure the information is accurate, but ACC and CBC make no representations or warranties as to the completeness or accuracy of the information. ACC, CBC, and the product manufacturers listed in this document reserve the right to change, delete, or otherwise modify the information without any prior notice. Persons receiving this information must make their own determination as to a product's suitability prior to use based on the product labeling. ACC and CBC do not guarantee or warrant the standard of any product referenced or imply approval of the product to the exclusion of others that may be available. All products listed are registered for labeled uses in accordance with federal laws and regulations as of the date this document is being made available. State regulations may vary. In no event will ACC or CBC be responsible for damages of any nature whatsoever resulting from the use of or reliance upon products to which the information refers.

For use of the product, please contact the company/distributor to confirm use directions, or consult the EPA approved label at <https://www.epa.gov/pesticide-labels/pesticide-product-label-system-ppls-more-information>.

Ready to Use Products			
Commercially Available Product Name	Company/Distributor	EPA REG No.	
PURELL Foodservice Surface Sanitizer	GOJO Industries, Inc.	84368-1-84150	
PURELL Professional Surface Disinfectant	GOJO Industries, Inc.	84368-1-84150	
PURELL Healthcare Surface Disinfectant	GOJO Industries, Inc.	84368-1-84150	
PURELL Multi Surface Disinfectant	GOJO Industries, Inc.	84368-1-84150	
PURELL Food Processing Surface Sanitizer	GOJO Industries, Inc.	84368-1-84150	
Sani-Prime Germicidal Spray	Professional Disposables International, Inc.	9480-10	
Sani-HyPerCide Germicidal Spray	Professional Disposables International, Inc.	9480-14	
Sani-24 Germicidal Spray	Professional Disposables International, Inc.	42182-9-9480	
DETERGENT DISINFECTANT PUMP SPRAY	Stepan Company	1839-83	
SC-RTU DISINFECTANT CLEANER	Stepan Company	1839-220	
Sanicare TBX	Buckeye International, Inc.	1839-83-559	
Clorox Healthcare® Bleach Germicidal Cleaner Spray	Clorox Professional Products Company	56392-7	
Clorox Healthcare® Fuzion® Cleaner Disinfectant	Clorox Professional Products Company	67619-30	
Clorox Commercial Solutions® Clorox® Clean-Up Disinfectant Cleaner with Bleach ₁	Clorox Professional Products Company	67619-17	
Clorox Commercial Solutions® Clorox® Disinfecting Spray	Clorox Professional Products Company	67619-21	
Clorox Commercial Solutions® Clorox® 4-in-One Disinfectant & Sanitizer	Clorox Professional Products Company	67619-29	
Clorox 4 In One Disinfecting Spray	Clorox Professional Products Company	67619-29	
CloroxPro™ Clorox Total 360® Disinfecting Cleaner1	Clorox Professional Products Company	67619-38	
Clorox Commercial Solutions® Toilet Bowl Cleaner with Bleach1	Clorox Professional Products Company	67619-16	
Clorox Commercial Solutions® Clorox® Disinfecting Biostain & Odor Remover	Clorox Professional Products Company	67619-33	
Clorox Commercial Solutions® Clorox® Disinfecting Bathroom Cleaner	Clorox Professional Products Company	5813-40-67619	
Clorox Commercial Solutions® Tilex Soap Scum Remover	Clorox Professional Products Company	5813-40-67619	
Clorox Commercial Solutions® Hydrogen Peroxide Cleaner Disinfectant	Clorox Professional Products Company	67619-24	
Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectant	Clorox Professional Products Company	67619-24	
Clorox Clean Up Cleaner + Bleach	The Clorox Company	5813-21	
Clorox Disinfecting Bathroom Cleaner	The Clorox Company	5813-40	
Clorox Scentiva Bathroom Disinfectant Foamer	The Clorox Company	5813-40	
Clorox Toilet Bowl Cleaner with Bleach	The Clorox Company	5813-89	
Clorox Toilet Bowl Cleaner Clinging Bleach Gel	The Clorox Company	5813-89	
Clorox Multi Surface Cleaner + Bleach	The Clorox Company	5813-105	
Clorox Pet Solutions Advanced Formula Disinfecting Stain & Odor Remover	The Clorox Company	5813-110	
Clorox Scentiva Bathroom Disinfecting Foam Cleaner	The Clorox Company	5813-115	
LYSOL BRAND CLING & FRESH TOILET BOWL CLEANER	RB	777-70	
LYSOL BRAND POWER TOILET BOWL CLEANER	RB		
LYSOL BRAND LIME & RUST TOILET BOWL CLEANER		777-81	
LYSOL BRAND BLEACH MULTI-PURPOSE CLEANER	RB		
LYSOL BRAND BLEACH MOLD AND MILDEW REMOVER		777-83	
LYSOL BRAND POWER PLUS TOILET BOWL CLEANER	RB	777-132	
LYSOL® DISINFECTANT SPRAY	RB		
PROFESSIONAL LYSOL® DISINFECTANT SPRAY		777-99	
LYSOL® DISINFECTANT MAX COVER MIST	RB	777-127	
BLEACH DISINFECTANT CLEANER	Ecolab Inc	1677-235	
KLERCIDE 70/30 IPA	Ecolab Inc	1677-249	
PEROXIDE DISINFECTANT AND GLASS CLEANER RTU	Ecolab Inc/Kay Chemical Co.	1677-251	
TB DISINFECTANT CLEANER READY-TO-USE	Ecolab Inc/Kay Chemical Co.	1839-83-1677	
VIRASEPT	Ecolab Inc	1677-226	
PEROXIDE MULTI SURFACE CLEANER AND DISINFECTANT RTU	Ecolab Inc/Kay Chemical Co.	1677-251	
TB Quat	Gordon Food Service	70627-2-45133	
RTU Disinfectant Cleaner	U S Chemical	70627-2-7546	
Protection that Lives on Microban 24 Hour Keeps Killing 99.9% of Bacteria for Up to 24 Hours Multipurpose Cleaner ¹ (Microban 24 Hour Multi-Purpose Cleaner)	The Procter & Gamble Company	4091-21-3573	
“Protection that Lives on Microban 24 Hour Keeps Killing 99.9% of Bacteria for Up to 24 Hours Bathroom Cleaner ¹ (Microban 24 hour Bathroom Cleaner)	The Procter & Gamble Company	4091-22-3573	
MAPS- 1 RTU	SynBionic Evolution, LLC.	6826-289-92677	
Lemon Disinfectant	American Chemical Systems	6836-152-86408	
Clear Gear Sports Spray	On Track Enterprises, Inc d/b/a Clear Gear	6836-152-89301	
Foster First Defense	HB Fuller Construction Products Inc.	6836-152-63836	
Sani-Spritz Spray	Nyco Products Company	6836-152-8370	
Don-O-Mite	Edward Don & Company	6836-152-14462	
One-Step Disinfectant Cleaner	Schultz Supply Company	6836-152-46493	
X-Ray Apron Cleaner Disinfectant	BioXco LLC / MediRedi LLC	6836-289-93240	
OXIVIR Tb	Diversey, Inc.	70627-56	
All Purpose Virex	Diversey, Inc.	1839-83-70627	
OXIVIR 1	Diversey, Inc.	70627-74	
Quat Plus TB	Rochester Midland Corporation	1839-83-527	
SaniZide Pro 1 Spray	Safetec of America, Inc.	88494-3-67161	

SaniZide Pro 1 Wipes	Safetec of America, Inc.	88494-4-67161
Maxim GSC Germicidal Spray Cleaner	Midlab	1839-83-45745
Maxim No Acid Non-Acid Bowl & Restroom Disinfectant Cleaner RB 352 Brite	Midlab	1839-83-45745
Bright Solutions Lemon Zip Disinfectant RTU	Bright Solutions	1839-83-75473
Bright Solutions RTU Bathroom Cleaner Non-Acid Bowl and Restroom Disinfectant	Bright Solutions	1839-83-75473
Disinfectant Spray Cleaner RTU Victoria Bay	Victoria Bay	1839-83-68168
Non-Acid Bathroom Cleaner Victoria Bay	Victoria Bay	1839-83-68168
Fight Bac RTU	Betco Corporation	1839-83-4170
Simple Green Clean Finish	Sunshine Makers, Inc	1839-220-56782



Dilutable Products			
Commercially Available Product Name	Company/Distributor	EPA REG No.	
Stepan Spray Disinfectant Concentrate	Stepan Company	1839-248	
Buckeye Sanicare Lemon Quat	Buckeye International, Inc.	47371-131-559	
Buckeye Sanicare Mint Quat	Buckeye International, Inc.	47371-131-559	
Buckeye Sanicare Pine Quat	Buckeye International, Inc.	47371-131-559	
Buckeye Sanicare Quat 128	Buckeye International, Inc.	47371-130-559	
Buckeye Sanicare Quat 256	Buckeye International, Inc.	47371-129-559	
Buckeye Sani-Q ²	Buckeye International, Inc.	6836-266-559	
Buckeye Terminator	Buckeye International, Inc.	6836-75-559	
Buckeye Eco Neutral Disinfectant	Buckeye International, Inc.	47371-129-559	
Buckeye Eco One-Step Disinfectant-Deodorizer-Cleaner	Buckeye International, Inc.	6836-78-559	
CloroxPro™ Clorox® Germicidal Bleach	Clorox Professional Products Company	67619-32	
Clorox Disinfecting Bleach2	The Clorox Company	5813-111	
Clorox Performance Bleach1	The Clorox Company	5813-114	
Clorox Germicidal Bleach3	The Clorox Company	5813-114	
PROFESSIONAL LYSOL® HEAVY DUTY BATHROOM CLEANER CONCENTRATE	RB	675-54	
LYSOL BRAND CLEAN & FRESH MULTI-SURFACE CLEANER	RB	777-89	
14 PLUS ANTIBACTERIAL ALL PURPOSE CLEANER	Ecolab Inc	6836-349-1677	
20 NEUTRAL DISINFECTANT CLEANER	Ecolab Inc	47371-129-1677	
A-456 II DISINFECTANT CLEANER	Ecolab Inc	6836-78-1677	
BOOST 3200	Ecolab Inc	63761-8-1677	
BOOST 3200 CIP	Ecolab Inc	63761-8-1677	
BOOST SURFACE TREATMENT	Ecolab Inc	63761-10-1677	
CLICKSAN DISINFECTANT/SANITIZER	Ecolab Inc/Kay Chemical Co.	6836-305-5389	
COSA OXONIA ACTIVE	Ecolab Inc	1677-129	
FOOD CONTACT QUAT SANITIZER	Ecolab Inc	6836-70-541	
KAY SURFACE SANITIZER	Ecolab Inc/Kay Chemical Co.	6836-70-5389	
KAYQUAT II	Ecolab Inc/Kay Chemical Co.	6836-266-5389	
MULTI-PURPOSE NEUTRAL PH GERMICIDAL DETERGENT	Ecolab Inc	47371-131-1677	
NEUTRAL DISINFECTANT CLEANER	Ecolab Inc	47371-129-1677	
OASIS 499 HBV DISINFECTANT	Ecolab Inc	6836-78-1677	
OXONIA ACTIVE	Ecolab Inc	1677-129	
OXYCIDE DAILY DISINFECTANT CLEANER	Ecolab Inc	1677-237	
PEROXIDE MULTI SURFACE CLEANER AND DISINFECTANT	Ecolab Inc/Kay Chemical Co.	1677-238	
QUATERNARY DISINFECTANT CLEANER	Ecolab Inc	6836-78-1677	
SANI QUAD FOOD SERVICE SANITIZER	Ecolab Inc/Kay Chemical Co.	6836-70-1677	
SANITIZER / COMMERCIAL SANITIZER	Ecolab Inc	6836-302-1677	
SUPER SAN FOOD SERVICE SANITIZER	Ecolab Inc/Kay Chemical Co.	6836-305-1677	
TRIPLE PLAY	Ecolab Inc/Kay Chemical Co.	47371-131-541	
Clean Quick Broad Range Quaternary Sanitizer	The Procter & Gamble Company	6836-278-3573	
multi-quat mega-1	Intercon Chemical Company	6836-77-48211	
TEC-QUAT 128	Getinge USA Sales, LLC	6836-77-10648	
CEN-KLEEN IV	ARJO HUNTLEIGH, INC. D/B/A ARJOHUNTLEIGH	6836-75-45556	
ACS Tornado 1 - One Step Disinfectant	American Chemical Systems	6836-75-86408	
Performex	Brulin & Co., Inc.	6836-364-106	
Germ-A-Cide 64	Detco Industries, Inc.	47371-131-58111	
128 E-Fecticide	Multi-Clean Inc.	6836-365-5449	
256 Century Q	Multi-Clean Inc.	47371-129-5449	
Q.T.Plus	Hillyard Industries, Inc	6836-77-1658	
Q.T. 3	Hillyard Industries, Inc	6836-349-1658	
Dakil 5	Davis Manufacturing and Packaging, Inc.	47371-129-50591	
Centraz San Sol 10	Centraz Industries, Inc.	6836-266-9194	
Simple Green d Pro 5	Sunshine Makers, Inc.	6836-140-56782	
Medline Micro-Kill NQ5	Medline Industries, Inc	6836-364-37549	
Classic Whirlpool Disinfectant and Cleaner	Central Solutions, Inc.	6836-75-211	
OPI SpaComplete	OPI Products, Inc.	6836-77-70397	
CONFIDENCE PLUS 2	WALTER G LEGGE CO/MINE SAFETY APPLIANCES COMPANY	47371-130-4204	
Coastwide Professional Hepastat 256	Staples Contract & Commercial LLC	6836-78-86226	
Brighton Professional Hepastat 256	Staples Contract & Commercial LLC	6836-78-86226	
128 Disinfectant	Dalco Enterprises, Inc	6836-365-87580	
3M™ Quat Disinfectant Cleaner Concentrate	3M	6836-78-10350	
3M™ Neutral Quat Disinfectant Cleaner Concentrate	3M	47371-129-10350	
3M™ Disinfectant Cleaner RCT Concentrate	3M	6836-349-10350	
3M™ MBS Disinfectant Cleaner Fresh Scent Concentrate	3M	6836-361-10350	
3M™ MBS Disinfectant Cleaner Concentrate	3M	6836-361-10350	
GASCO Quaternary Sanitizer	GASCO INDUSTRIAL Corp.	6836-266-81974	
MixMate Germicidal Cleaner	U S Chemical	47371-131-7546	
Lemon Cleaner	U S Chemical	47371-131-7546	
Pine Cleaner Disinfectant	U S Chemical	47371-131-7546	
Extra Spearmint Germicidal Detergent and Deodorant	U S Chemical	47371-131-7546	
Sanifect Plus 1	U S Chemical	47371-131-7546	
Sanifect Plus 2 Fresh N Clean	U S Chemical	47371-131-7546	
Neutral Disinfectant Cleaner	Gordon Food Service	47371-131-45133	
Germicidal Cleaner and Disinfectant	Gordon Food Service	47371-131-45133	
MixMate Non-Acid Restroom Cleaner & Disinfectant	U S Chemical	6836-75-7546	
MixMate Microtech Non-Acid Restroom Cleaner & Disinfectant	U S Chemical	6836-75-7546	
Array Non-Acid Restroom Cleaner & Disinfectant P	Gordon Food Service	6836-75-45133	
OXY-TEAM™ DISINFECTANT CLEAENER	Diversey, Inc.	70627-58	
VIREX™ II / 256	Diversey, Inc.	70627-24	
Virex Plus	Diversey, Inc.	6836-349-70627	
G-5 Sanitizer	Diversey, Inc.	6836-266-70627	
Wide Range II Non-Acid Disinfectant Washroom Cleaner Concentrate	Diversey, Inc.	6836-75-70627	
Avert Sporidical Disinfectant Cleaner	Diversey, Inc.	70627-72	
United 255 DISINFECT PLUS	UNITED LABORATORIES INC	47371-131-9250	
Enviro Care Neutral Disinfectant	Rochester Midland Corporation	47371-131-527	
PUR TABS	EarthSafe Chemical Alternatives, LLC	71847-6-91524	
PUR:ONE	EarthSafe Chemical Alternatives, LLC	71847-7-91524	

Mint Disinfectant Plus
pH7Q
Quat Stat 5
Triforce
Simplicity Sanibet Multi-Range Sanitizer
Pine Quat
Quaternary Disinfectant Cleaner
TruShot Disinfectant Cleaner For Hospitals
TruShot Disinfectant Cleaner Restroom Cleaner & Disinfectant
Whizzer
Formula 17750 Wintermint
Formula 17822 Deo-Clean Multi
SUPER 60 PYM 64 FOAMER
PC-30F M-KYL 128 FOAMER
Neutra-Tec 64

Gurtler Industries, Inc.	6836-75-47567
Betco Corporation	47371-131-4170
Betco Corporation	6836-361-4170
Betco Corporation	6836-349-4170
Betco Corporation	6836-266-4170
Betco Corporation	47371-192-4170
SC Johnson Professional	6836-78-89900
SC Johnson Professional	6836-348-89900
SC Johnson Professional	6836-348-89900
Mueller Sports Medicine	6836-77-10118
Chemsafe International	47371-131-55731
Chemsafe International	47371-131-55731
Pioneer Chemical Co.	47371-131-151
Pioneer Chemical Co.	6836-136-151
Surtec, Inc.	47371-131-40714

Wipe products		
Commercially Available Product Name	Company/Distributor	EPA REG No.
PURELL Professional Surface Disinfectant Wipes	GOJO Industries, Inc.	85150-1
PURELL Foodservice Surface Sanitizing Wipes	GOJO Industries, Inc.	84150-1
Sani-Cloth Prime Germicidal Disposable Wipe	Professional Disposables International, Inc.	9480-12
Buckeye Sanicare Disinfecting Wipes	Buckeye International, Inc.	6836-313-559
Clorox Healthcare® Bleach Germicidal Wipes	Clorox Professional Products Company	67619-12
Clorox Healthcare® VersaSure® Wipes	Clorox Professional Products Company	67619-37
Clorox Commercial Solutions® Clorox® Disinfecting Wipes	Clorox Professional Products Company	67619-31
Clorox Commercial Solutions® Hydrogen Peroxide Cleaner Disinfectant Wipes	Clorox Professional Products Company	67619-25
Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectant Wipes	Clorox Professional Products Company	67619-25
Clorox Disinfecting Wipes	The Clorox Company	5813-79
I7 DISINFECTANT WIPES	Ecolab Inc./Kay Chemical Co.	6836-340-1677
MULTI PURPOSE DISINFECTING WIPES	Ecolab Inc	6836-340-1677
SCRUBS® MEDAPHENE® Plus Disinfecting Wipes	ITW Pro Brands	6836-340-11694
Wipes Plus Disinfecting Wipes 1	Progressive Products, LLC.	6836-340-75399
Handyclean™ Steridol Wipes	Diamond Wipes International, Inc.	6836-340-74058
Monk Disinfectant Wipes	Dreumex USA, Inc.	6836-313-91910
SONO Ultrasound Wipes	Advanced Ultrasound Solutions, Inc.	6836- 340-89018
SONO Disinfecting Wipes	Advanced Ultrasound Solutions, Inc.	6836- 340-89018
Oxivir 1 Wipes	Diversey, Inc.	70627-77
OXIVIR™ WIPES	Diversey, Inc.	70627-60
CLAIRE BROAD SPECTRUM GERMICIDAL & DISINFECTANT WIPE	Claire Manufacturing Company	6836-340-706
NASSCO PRO SERIES 88 BROAD SPECTRUM GERMICIDAL & DISINFECTANT WIPES	NASSCO Inc	6836-340-18166
LCP BROAD SPECTRUM GERMICIDAL & DISINFECTANT WIPES	LOR Cleaner Products	6836-340-88324
SSS TRIPLE S DISINFECTANT WIPES	Triple S	6836-340-12120
BROAD SPECTRUM GERMICIDAL DISINFECTANT HEALTH CARE WIPES	Kandel & Son Inc	6836-340-40976
Touch Point Plus Disinfectant Wipes	Innocore Sales & Marketing	6836-340-92977

As a public service, CBC is maintaining this list of antimicrobials that have proven to be effective against stronger pathogens, such as norovirus or ebola. By publishing and maintaining this open list, CBC relieves federal, state, and local health officials' resources in order to focus on other aspects of the important effort to limit spread of this new disease. Listing is voluntary and compliance with EPA's "emerging viral pathogen" guidance for antimicrobial products is verified by CBC. CBC will be working with federal and state officials to disseminate the list and make it accessible to all those who need to be in the know.

ⁱ To include a product on CBC's list of Coronavirus—Fighting Products, please contact Ms. Komal K. Jain at komal_jain@americanchemistry.com

Updated 3/3/2020