Joe Nazzaro, Roll-on Floor Systems 900 words 5-4-20

A PRIMER ON SANITIZING NON-POROUS SURFACES

One cannot sanitize a dirty surface—organic soils will consume the sanitizer. To sanitize any non-porous surface using ANY sanitizer, the surface being sanitized must be physically clean. Detergent residues must be rinsed well or they will neutralize most sanitizers. Detergents are alkaline, most sanitizers are acidic. Spraying a surface with a sanitizing solution without first cleaning the surface properly is a waste of time and money.

The most commonly used sanitizers in food applications are chlorine gas, sodium or calcium hypochlorite, and organic chlorine. All form hypochlorous acid in water based solutions. Chlorine is affected by pH and temperature destabilizes chlorine. Also, chlorine is rapidly inactivated by organic matter. Corrosiveness to surfaces is a major disadvantage when using chlorine, and high temperature increases the risk of corrosion.

DISINFECTING SURFACES Eliminating the Virus on Surfaces

• Clean and disinfect frequently touched objects and surfaces using regular household cleaning sprays or wipes that contain 70% alcohol.

Natural-based substances tend to be safer, while still effective at eliminating the virus on surfaces. Look for products with the following active ingredients (* indicates listed by EPA's Design for the Environment Program (DfE)):

Citric acid*
Ethanol*
Isopropanol*
L-lactic acid*
Hydrogen peroxide*
Sodium bisulfate*
Thymol

"Hospital Grade" substances tend require special handling practices and some protection for the person using them, and are more broadly effective in eliminating the virus on non-porous surfaces.

EPA has approved a long list of products that will eliminate the COVID-19 virus on surfaces. The list includes products containing toxic chemicals. Exposure to these chemicals are associated with a long list of adverse effects, from asthma to cancer. A partial list here is based on a product's popularity for use:

- **Quaternary Ammonium compounds (*quats*)***
- Iodine
- Phenolic compounds
- Glycolic acid
- Octanoic acid
- Potassium peroxymonosulfate
- Ammonium carbonate
- Ammonium bicarbonate

All of these ingredients are associated with harm to the respiratory system. In addition, some quats have been shown to cause mutations, lower fertility, and increase antibiotic resistance.

(Avoid products containing: Peroxyacetic acid (peracetic acid) Chlorine compounds (sodium hypochlorite, hypochlorous acid, sodium chlorite, sodium chloride) or Sodium Dichloro-S-Triazinetrione)

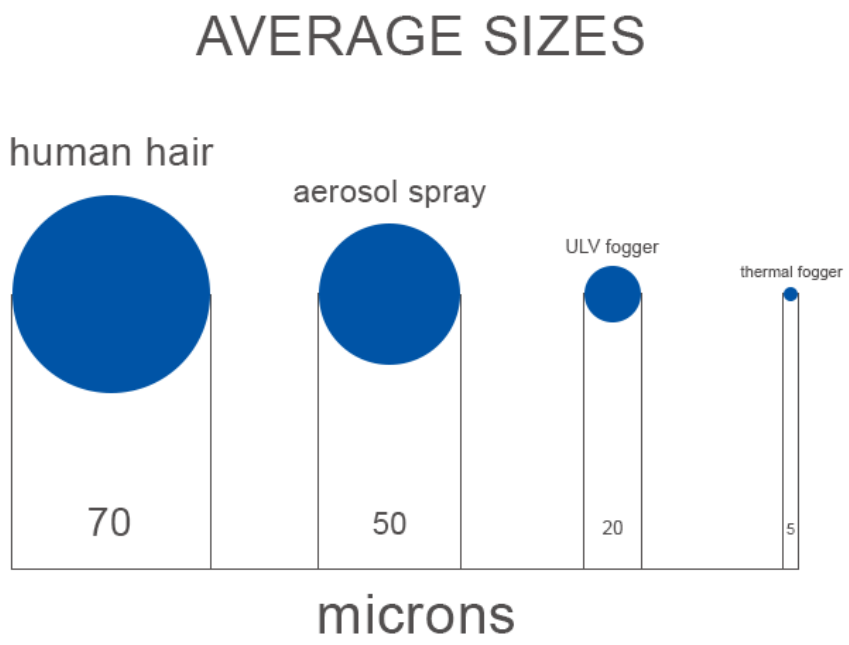
***The quaternary ammonium compounds** are widely used as disinfectants. **Surfaces must be thoroughly rinsed between cleaning and sanitation**. Quats are excellent environmental sanitizers for floors, walls, drains, and equipment. They are noncorrosive to metals and stable at high temperature. The quaternaries are good cleaning agents, but high water hardness and materials such as cotton and gauze pads can make them less effective because they absorb the active ingredients. One study showed a significant decline (~40%–50% lower at 1 hour) in the concentration of quaternaries released when cotton or rags were used in a single bucket, compared with a *spunlace* (lint-free) wiper in a "*two-bucket mopping system.*" As with several other disinfectants (e.g., phenolics, iodine base) some form of bacteria can actually survive or grow in them as they degrade. Quats are incompatible with soaps and most detergents.

APPLYING DISINFECTANT TO NON-POROUS SURFACES

SPRAY-AND-WIPE OR FOG APPLICATION

Safety of personnel must be considered before deciding on the method of delivering the disinfectant. The preferred method in enclosed areas of any size is the decision of the facility operator. Simply stated, spray-and-wipe application is the safest and easiest to achieve in our environments. Spray and wipe operations can be accomplished by personnel with only modest training in protocol. Fogging requires full body and respiration protection owing to the risks to health from the droplets, easily inhaled and effecting the skin as well as being hazardous to eyes.

The droplets produced by thermal foggers can be as small as 5 microns. The droplets from ULV foggers can vary from 10–30 microns in size. Aerosol sprays generally range from 30–50 microns. Thermal foggers use heat to vaporize the chemical and turn it into a dense fog with droplets that are approximately 5–10 microns in size**.** Ultra-low volume (ULV) foggers use air pressure and a special nozzle to break a liquid into droplets, which are then sprayed out as fog.



PERSONAL PROTECTIVE EQUIPMENT WHILE FOGGING

At these small sizes, the droplets become hazardous to the health of the applicator. Disposable protective body suits (available between $12.00 and $25.00 at construction or hardware stores), full coverage eye protection that will not let droplets enter, respirators - at least N95 rated - and careful protection of exposed skin <u>are a must</u> when fogging.

RESPIRATOR SAFETY TIPS

Wear a protective mask when using sanitizing chemicals.

- **Breathe Easy:** You should change your respirator if it becomes clogged and hard to breathe through.
- **Notice Smells:** Change the filter if you notice any changes in smells or taste; or if your throat, nose, or lungs become irritated
- **Keep Dry:** Many respirators, especially disposable ones, become ineffective if they get wet.
- **Follow Instructions:** Replace filters as instructed on the package.
- **Don't Reuse:** Disposable respirators aren't meant to be used more than once.
- **Throw Away if Broken:** Discard any respirator or filter canister that is dirty or damaged.

References, For more detailed information, please view:

CDC
Disinfection Guidelines
www.cdc.gov/infectioncontrol/guidelines/disinfection/disinfection-methods/chemical.html

See also: Aerosol Penetration Through Surgical Masks.
https://www.cdc.gov/niosh/nioshtic-2/00210276.html

EPA
https://www.epa.gov/sites/production/files/2015-09/documents/cloroxpcol_final.pdf

UNIVERSITY OF MARYLAND
Joint Institute For Food Safety and Applied Nutrition (JIFSAN) publication.
Section Nine: Sanitizing Procedures by Alan Parker
https://jifsan.umd.edu/files/pdf/GAqP%20Manuals/09%20GAqPs%20Manual%20CleaningSanitation.pdf

Joe Nazzaro, a Life Member of the RSA, has been involved in counseling in the application and maintenance of floor finishes, carpet cleaning and selections of detergents and non-residue cleaners within the skating center industry for over 40 years. Joe has been an occasional contributor to Roller Skating Business and Rinksider publications for over 50 years. The factory producing his Roll-on Products is a supplier of sanitizing products and cleaning equipment and machinery preferred by schools, hospitals and the food service industries.