

Q&A to the food & beverage industry on the control of SARS-CoV-2 and its associated disease COVID 19. (v1.6) Holchem Laboratories Ltd. 15 November 2020

This update (Ver1.6 – 15 November 2020) of frequently asked questions about COVID-19 provides recommendations based on our expertise and knowledge. It references advice from the World Health Organisation (WHO), NHS, UK and Irish Government and organisations representing the Food and Drinks Industries. With the SARS-CoV-2 virus and its associated disease COVID-19, research and findings are continually developing; this article will be updated in line with recognised best practice.

If you have any queries or questions, then please do not hesitate to contact your Holchem Technical Sales Consultant or our office. The Holchem Team are here to help.

SARS-CoV-2 & COVID-19?

SARS-CoV-2 is a coronavirus; part of a large family of viruses which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease COVID-19.

SARS-CoV-2 and the coronavirus disease associated with it, known as COVID-19, is described in detail on the following links which should always be the default reference sources as appropriate.

UK Government [link](#)

Ireland, Health Service Executive [link](#)

Internationally the European Centre for Disease Prevention and Control [link](#)

The basis for COVID-19 control has not fundamentally changed and is associated with:

1. Remaining 2m apart from other people to protect from touching and cough droplets
2. Frequent handwashing
3. Good personal hygiene practices in relation to sneezing – “catch it – bin it – kill it”

Holchem have now produced a range of posters that can be displayed around sites to help with these messages. They can be [downloaded](#) for self-printing from our website.

How is SARS-CoV-2 transmitted between people?

People can catch COVID-19 from others who have the virus. The disease spreads primarily from person to person through small droplets from the nose or mouth, which are expelled when a person with COVID-19 coughs, sneezes, or speaks. These droplets are relatively heavy, do not travel far and quickly sink to the ground.

People can catch COVID-19 if they breathe in these droplets from a person infected with the virus. Therefore, it is important to keep a safe distance from each other. Although the World Health Organisation (WHO) have recommended a 1 metre distance governments generally have set a recommended “social distance” of 2 metres.

These droplets can land on objects and surfaces around the person such as processing equipment, tables, doorknobs and handrails. People can become infected by touching these objects or surfaces, then touching

their eyes, nose or mouth. Therefore, it is important to wash your hands regularly with soap and water or disinfect with a hand sanitiser. Recent research evaluated the survival of the COVID-19 virus on different surfaces and reported that the virus can remain viable for up to 72 hours on plastic and stainless steel.

Research has found very high levels of virus emitted from the throat of patients from the earliest point in their illness when people are generally still going about their daily routines. In some cases, infected people may be asymptomatic or pre-symptomatic and may not display any signs or symptoms of disease or may present with mild symptoms that are easily overlooked. Some infected people not yet displaying symptoms have been shown to be contagious and capable of spreading the virus.

Is COVID-19 transmitted by foods and do we need to change our cleaning and disinfection programmes in food production areas?

There is still no real evidence that COVID-19 is transmitted via food or food packaging. Please see links to advice from:

EFSA Europe – [Food Source Transmission](#)

UK Gov, England - [Consumer Guidance](#)

UK Gov, England - [Food Business Guidance](#)

FSA, Scotland – [Information in Relation to Food](#)

The Food & Drink Industry - [Q&A](#)

This means that your existing, standard, routine cleaning practices (to remove food soils) and disinfection (to control bacterial pathogens) should continue to be used without change. These cleaning and disinfection practices have been developed as an effective measure to control microbial pathogens in the food whilst maintaining the quality of the food (organoleptic aspects) and minimising the risks to materials of construction and cleaning operative safety. They should be seen, therefore, as separate to coronavirus decontamination strategies where the target microorganism is SARS-CoV-2 and the major risk is to the cleaning operative not the food consumer.

What additional hygiene measures do I need to put in place - touchpoints?

The primary focus of any additional hygiene and sanitation measures implemented by food businesses is on keeping the SARS-CoV-2 virus out of their businesses and reducing potential cross contamination within the business.

Cross contamination with hands as the vector must be considered. It may be worth identifying the following touchpoints by their category because the frequency of cleaning/sanitation will vary. With the variety of surfaces, it is important to choose a cleaning method that is appropriate, effective and does not damage the surface. For instance, with plastic or stainless-steel door handles a disinfectant wet wipe or a dry wipe plus spray disinfectant would be suitable. With a computer an alcohol based wet wipe would be most suitable.

1. Touchpoints that are specific to an operator or to a small group of operators. This would include for instance stop/start buttons or an HMI screen on a piece of equipment or a production line. Generally, these are cleaned as part of the hygiene clean. We would recommend that these are also cleaned and disinfected as part of the break or interim clean and at least twice per shift.

2. Touchpoints that are specific to a large group of food facility operatives. This will include such items within the changing and food processing facility as: handsoap, paper, PPE and hand sanitiser dispensers, door handles, telephones, etc.
Again it is suggested that these are cleaned as part of the break or interim clean and at least twice per shift.
3. Touchpoints that are general to staff will include a large number of surfaces within the factory: for instance door handles, canteen trays, drinks machines, tables, chairs, telephones, computers, printers, specialist equipment (consider QC, development or sampling labs). It is suggested that these are cleaned hourly.
4. Touchpoints that are general to staff and the public. These points should be minimised to reduce the chance of cross contamination but may include areas such as: goods in, goods out, reception and post. Again, it is suggested that these are cleaned hourly.

If there are frequently touched surfaces where the touching of such surfaces cannot be avoided, e.g. stair rails, it would be useful to install hand hygiene stations adjacent; so hands can be immediately decontaminated.

Do I need to change my barrier controls?

Barrier controls exist at the point of delivery and exit to a food facility and within a facility. These barriers should be reviewed and strengthened if necessary.

It is good practice for drivers and other staff delivering to (or taking away from) food premises not to leave their vehicles during delivery. Drivers should be supplied with an efficacy tested hand sanitiser, a disinfectant, and paper towels. Drivers should use a hand sanitiser before passing delivery documents to food premises staff. Disposable containers and packaging should be used to avoid the need for cleaning of any returns. In the case of reusable containers, appropriate hygiene and sanitation protocols should be implemented. Holchem's container reuse scheme launders and checks containers that are to be reused.

Changing and washrooms are a major control barrier to reduce introducing physical or microbiological hazards into the food processing area. The procedures in place should be re-evaluated to ensure they are sufficient to control the additional hazard of SARS-CoV-2.

1. Physical separation during changing and handwashing should be maintained.
2. Food workers should avoid touching their mouth and eyes whether wearing gloves or not. If they do touch, then they should immediately wash their hands.
3. Correct handwashing and drying procedure should be followed by all staff with compliance monitored and training carried out. Frequent hand washing remains the best way to control COVID-19 transmission. [Handwashing Video](#).
4. High velocity/pressure hand dryers which can spread large droplets locally should be routinely cleaned and including the surrounding area.
5. Paper hand towels should be binned and a routine of emptying the bins and sanitising adopted.
6. Hand sanitiser stations should ideally be available within the food processing areas such that no contact with door handles is required prior to starting work and to allow operatives to frequently re-sanitise their hands.
7. Disposable gloves should not be used in the food work environment as a substitute for handwashing. The COVID-19 virus can contaminate disposable gloves in the same way it does hands. Also, removal of disposable gloves can lead to contamination of hands. Wearing disposable gloves can give a false sense of security and may result in staff not washing hands as frequently as required.
8. Existing sanitising tunnels or door entry sprays should be verified as working.

Do I need to change working practices?

Physical distancing is very important to help reduce the spread of COVID-19. This is achieved by minimising contact between potentially infected individuals and healthy individuals. All food businesses should follow physical distancing guidance as far as reasonably possible. Where the food production environment makes it difficult to do so, employers need to consider what measures to put in place to protect employees. A useful guide is UK Gov – [Working Safely during COVID-19](#)

Examples of practical measures to adhere to physical distancing guidance in the food-processing environment are to:

1. Stagger workstations on either side of processing lines so that food workers are not facing one another or evaluate the use of screens.
2. Provide PPE such as face masks, hair nets, disposable gloves, clean overalls, and captive footwear. The use of PPE would be routine in high-risk areas of food premises that produce ready-to-eat and cooked foods.
3. Space out workstations, which may require reduction in the speed of production lines.
4. Limit the number of staff in a food preparation area at any one time.
5. Organise staff into working groups or teams to facilitate reduced interaction between groups.
6. Stagger work breaks for staff to reduce risk in change areas, canteens and toilets.
7. Arrange shift change-over timings to reduce risk of excess staff from both shifts being in the same areas at the same time (e.g. changing and washroom areas).

How is decontamination for known cases of COVID-19 different from routine cleaning and disinfection?

As the pandemic progresses, particularly with far more testing opportunities, the number of food manufacturer's staff testing positive for COVID-19 is likely to increase. Two decontamination strategies may be apparent: -

1. Local decontamination of specific areas of the factory if e.g. one or two cases of COVID-19 are identified.
2. Decontamination of the whole factory if the cases of COVID-19 are numerous and the factory chooses to temporarily close.

An area to be decontaminated may have residual SARS-CoV-2 in the air and on surfaces. It is suggested that most of the virus particles produced by the COVID-19 sufferer will fall to the floor quickly within a 2m radius of the person though there may be some particles that are aerosolised and remain airborne. SARS-CoV-2 landing on the floor or on surfaces touched by the COVID-19 sufferer can remain infective for up to 72 hours (government advice) though this could be longer (up to 9 days) depending on the surface and conditions. SARS-CoV-2 will lose infectivity in the air by 50% in approximately 3 hours but will also be diluted by air movements and room air changes.

For scenario 1. above, cleaning and disinfection of surfaces will be required, together with consideration for air control. Cleaning and disinfection of an area known to have been contaminated is different from routine cleaning and disinfection in that disinfectants are chosen with known virucidal activity and additional risk assessments should be undertaken.

For scenario 2. above, leaving a factory fallow for 72 hours prior to production recommencing should be sufficient to significantly reduce the infectivity of any coronavirus present. Additional cleaning and disinfection, which would routinely be undertaken following any period of factory shutdown as best practice, would also further remove or reduce the infectivity of any viruses present after 72 hours.

Advice on decontamination by European Centre for Disease Prevention and Control (ECDC) can be found in this [document](#). Holchem have interpreted this guidance into two generic CICs which can be accessed via our [website](#).

In terms of additional PPE, it is likely that the requirement for the wearing of face masks should be considered. The need for, or the type of protection chosen (visor plus disposable surgical masks, or disposable FFP2/FFP3 respirators, or 'face fitted' and individual protection devices), will depend on the probable level of SARS-CoV-2 particles present and the ability of the cleaning and disinfection method to produce droplets and aerosols. Cleaning techniques using wipes, or disinfectant sprays and wiping, will produce much lower levels of aerosol than techniques using hoses.

For the air, the longer the time after the COVID-19 sufferer was in the area, and the greater the mechanical ventilation in the area (air changes per hour), the lower the level of viable SARS-CoV-2 particles are likely to be present. It may be prudent, therefore, and especially for rooms with poor ventilation, to leave such areas for as long as possible prior to production recommencing. To reduce factory down-time, fogging of areas may have some control on airborne viruses, and could be completed in 2-3 hours. However, whilst fogging's effects on airborne bacteria are established, the ability of chemical fogging to control airborne viruses is not well established.

What about the use of fogging?

Fogging, after routine cleaning and disinfection has taken place, is undertaken to create and disperse a disinfectant aerosol to reduce the numbers of airborne microorganisms and to apply disinfectant to surfaces that are not routinely disinfected during end-of-production cleaning and that may be difficult to manually reach.

Fogging is most effective with particle sizes in the range 10-20 micron (μm) with an air velocity at the nozzle of 100m/s. Larger particle sizes can be used if the air velocity is increased or fans are used to assist the distribution of the droplets. Providing a suitable disinfectant is used, research has suggested that fogging is effective at reducing airborne microbial populations by two to three log orders in 30 to 60 minutes and horizontal surfaces by up to six log orders in 60 minutes, with minimal effect on vertical surfaces and the underneath of equipment. However, this research, undertaken at Campden BRI, used bacterial populations and whilst the disinfection of viruses on surfaces exposed to the fog can be predicted, the action on airborne viruses is unknown (from fogging systems used in food premises).

The fogging unit should be left to run its course which takes approx. 30-45 minutes to complete. No personnel should be in the area that is being fogged as the fog will cause breathing difficulties. It may take up to 1 hour after the fogger has emptied before access to the area is possible. For fogging to be effective a settling period of 45-60 minutes is recommended.

Fogging may have a role, therefore, as an additional control to cleaning and disinfection, for SARS-CoV-2 decontamination in food production areas. Perbac at 1 to 3% v/v should be used.

In ancillary areas, however, more caution is needed. Again, as for food production areas, it should only be undertaken after cleaning and disinfection of targeted surfaces, as fogging, if used alone, does not guarantee sufficient deposition of chemical on all surface orientations to be effective. Ancillary areas are not designed for continuous wetting and all sensitive equipment (particularly electrical equipment) must be suitably protected. As for food production areas, there will also be a time delay before staff are able to utilise the area again and it may take extended time periods for surfaces subjected to the fog to dry.

Has there been any change in advice on hand hygiene practices?

Frequent hand washing remains the best way to control COVID-19 transmission and the food industry already have excellent washroom areas to facilitate this. A video on hand washing can be accessed via our [website](#).

However, there may be many surfaces that operatives could touch, post hand washing, that may be contaminated, particularly in the washroom area. Washroom cleaning practices should, therefore, be increased, with particular attention placed on the frequent disinfection of constantly touched surfaces e.g. dispensers, sinks, taps, driers, PPE self-serve storage (hairnet, earplugs, glove, beard net, hardhat/bump cap)

Where hand washing is not possible, or as an adjunct to hand wash, frequent use of hand gels/rubs should be established. The publicised approach is to use products containing between 60% - 80% wt/wt alcohol which dissolve the lipid envelope of the coronavirus. Other hand sanitisers, aqueous based plus biocide, can be equally effective as the alcohol-based products.

Do non alcohol-based hand sanitisers work as well as alcohol-based sanitisers?

Alcohol based products maybe in short supply as they are directed towards use in the NHS. Alternative non-alcohol products may therefore be more frequently used for routine hand hygiene in the food industry; these may have a different antiviral action on coronavirus.

All hand sanitisers, alcohol or otherwise, base their virucidal, limited spectrum or enveloped virus control claims to the European Virucidal Disinfectant Test EN 14476. So, whether they 'work as well or not', their antiviral efficacy and therefore claims are established by the same test method.

In general laboratory conditions, it would be unsafe to tests disinfectants against SARS-CoV-2. Further information can be gained about the disinfectant resistance of SARS-CoV-2, however, using the method of EN 14476 and using surrogate viruses. Surrogates are viruses that are closely related to SARS-CoV-2 but are regarded as safe to handle in the laboratory. Such surrogates include Canine coronavirus, Feline coronavirus and Murine hepatitis virus (MHV). As the COVID-19 outbreak develops, disinfectant and hand hygiene product manufacturers may use these surrogate viruses to help make performance claims against SARS-CoV-2.

Holchem make a range of alcohol based and non alcohol-based hand sanitisers with supporting claims for SARS-CoV-2 control.

Should we look at our hand drying method?

Hand drying techniques such as paper towels and high velocity/pressure air dryers can produce aerosols from the drying process. Questions have been raised as to whether this poses a risk in the washroom environment. It is believed, however, that COVID-19 is primarily transferred on large droplets (hence the need to keep 2m apart) rather than aerosols. In addition, with food operatives likely to be in good health and after a thorough handwash, the likelihood of viral particles being on the hand is low. Good hand washing and drying techniques should thus be encouraged.

In terms of good washroom practice, paper towels, which absorb such droplets, should be hygienically disposed of and waste bins should be frequently emptied, cleaned and disinfected. High velocity/pressure dryers tend to spread large droplet to their sides (again within 2m) and wetted areas of the washroom and the units themselves should be frequently cleaned and disinfected.

Is footwear a risk for COVID-19 transmission?

After coughing, talking etc., COVID-19 sufferers may discharge large droplets to the floor. As SARS-CoV-2 may survive for extended time periods on surfaces, it may be transferred onto footwear. This has been established in the clinical setting (Guo et. al. 2020), though whether it is likely to occur in a food factory is unknown. As a precaution, however, it may be good practice to always wash your hands after removing factory footwear. In addition, routine cleaning of footwear and their washing facility should be continued.

[Ref: Zhen-Deng Guo et.al. \(2020\) Aerosol and surface distribution of Severe Acute Respiratory Syndrome Coronavirus 2 in hospital wards, Wuhan, China, 2020. Centers for Disease Control and Prevention, Volume 26, Number 7 – July 2020.](#)

What tests can be used to show efficacy against SARS-CoV-2?

The European virucidal disinfectant test EN14476, can be used for both surface disinfectants and hand hygiene products. The product can be tested for:

1. Full Virucidal Activity: Polio virus, Adenovirus, Norovirus
2. Limited Spectrum Activity: Adenovirus, Norovirus
3. For Enveloped Viruses: Vaccinia virus
4. Against SARS-CoV-2 surrogate viruses such as Canine coronavirus, Feline coronavirus and Murine hepatitis virus (MHV).

Research and testing have shown that several chemical disinfectant types are effective at inactivating the virus. Viruses can generically be classified as enveloped or non-enveloped, with the non-enveloped viruses being the more disinfectant resistant.

SARS-CoV-2 is an enveloped virus and therefore generally easier to inactivate by chemical disinfectants.

What types of disinfectant can be used against SARS-CoV-2?

Disinfectant product groups that are effective against envelope viruses include:

1. Oxidising disinfectants such as sodium hypochlorite (WHO recommend 1,000ppm available chlorine) or other oxidising disinfectants such as hydrogen peroxide or peracetic acid.
2. Non-Oxidising disinfectants based on quaternary ammonium compounds, amphoteric and triamines.
3. Alcohols (Ethanol and Isopropyl alcohol) >60% wt/wt alcohol
4. Information data sheets from the supplier should be checked for efficacy testing and suggested use rate.

What products does Holchem have that make antiviral claims?

Holchem products that have been tested as effective against Enveloped Viruses or Surrogate SARS-CoV-2 viruses are shown in the table below.

Hand Sanitiser	
Handsan	Handsan is an aqueous based, non-alcohol, antimicrobial, post hand wash hand sanitiser liquid used to refill dispensers. The antimicrobial efficacy of Handsan has been tested against the following protocols EN14476, EN12054 and EN1500.
Microclenz Liquid	Microclenz Liquid is an alcohol-based antimicrobial, post hand wash hand sanitiser liquid. The antimicrobial efficacy of Microclenz Liquid has been tested against the following protocols EN14476 and EN1500.
Foamsan	Foamsan is a foaming, ready to use, alcohol-based hand sanitiser, supplied in a hygienic, sealed refill system with integral pump, fitting directly into the dispenser. Tested against EN1500 and EN14476.
Luxsan	Luxsan is a liquid, ready to use, alcohol-based hand sanitiser, supplied in a hygienic, sealed refill system with integral pump, fitting directly into the dispenser. Tested against EN1500 and EN14476.
Hand & Surface Virucidal Wipes	Impregnated sanitising wipes supplied in a tub containing 200 sheets of 200mm x 200mm 18gsm cloth. They can be used on all hard surfaces and hands for cleaning and disinfection. Tested against EN1276 and EN14476.

Surface Disinfectant	
Active	Triamine based surface disinfectant used widely in the food and beverage sector at a dilution of 1 to 5% v/v depending on the challenge. EN1276 at 1% v/v, EN1650 at 1% v/v, EN13697 at 1% v/v & EN14476 at 3% v/v (Enveloped Viruses) and at 5% v/v (Adenovirus, Norovirus).
Holquat	A Quaternary Ammonium Chloride based surface disinfectant used widely in the food and beverage sector at a dilution of 1 to 4% v/v depending on the challenge. EN1276 at 1% v/v, EN1650 at 1-2% v/v, EN13697 at 1% v/v & EN14476 at 4% v/v (Enveloped viruses).
Impact	A non-ionic and cationic surfactant based detergent disinfectant used widely in the food and beverage sector at a dilution of 1 to 7.5% v/v depending on the challenge. EN1276 at 1% v/v, EN1650 at 1-3% v/v, EN13697 at 2-5% v/v & EN14476 at 7.5% v/v (Enveloped viruses).
Sodium Hypochlorite (15%)	Sodium hypochlorite when diluted to use strength is an effective broad spectrum disinfectant. Use solutions should be rinsed off after a suitable contact time. EN1276 at 100ppm av. Cl., EN13697 at 400ppm av. Cl. EN14476 at 200 ppm av Cl. (WHO recommends 1000 ppm).

Surface Disinfectant	
M10 Chlorine Disinfectant (10%)	<p>Sodium hypochlorite when diluted to use strength is an effective broad spectrum disinfectant. Use solutions should be rinsed off after a suitable contact time.</p> <p>EN1276 at 100ppm av. Cl., EN13697 at 400ppm av. Cl.</p> <p>EN14476 at 200 ppm av Cl. (WHO recommends 1000 ppm).</p>
Perbac OPD (2% PAA)	<p>When diluted to use strength this broad spectrum disinfectant is used as an open plant surface disinfectant containing an equilibrium blend of Acetic Acid and Hydrogen Peroxide</p> <p>EN1276 at 400ppm PAA, EN13697 at 400ppm PAA, EN14476 at 400ppm PAA.</p>
Perbac (5% PAA)	<p>When diluted to use strength this broad spectrum disinfectant is used primarily as CIP disinfectant containing an equilibrium blend of Acetic Acid and Hydrogen Peroxide</p> <p>EN1276 at 400ppm PAA, EN13697 at 400ppm PAA, EN14476 at 1,000ppm PAA.</p>
Perbac 15 (15% PAA)	<p>When diluted to use strength this broad spectrum disinfectant is used primarily as CIP disinfectant containing an equilibrium blend of Acetic Acid and Hydrogen Peroxide</p> <p>EN1276 at 400ppm PAA, EN13697 at 400ppm PAA, EN14476 at 1,000ppm PAA</p>
QFD60 RTU	<p>QFD60 is a ready to use (RTU) non-QAC surface disinfectant supplied in a 1 litre trigger spray.</p> <p>EN1276, EN13697 & EN14476</p>
A23 Virucidal Disinfectant RTU	<p>A23 Virucidal Disinfectant is a ready to use (RTU) QAC surface disinfectant supplied in a 1 litre trigger spray.</p> <p>EN1276, EN13697 & EN14476</p>
Anti-Viral Cleaner & Disinfectant	<p>A concentrate hard surface cleaner and disinfectant tested against EN1276, EN1650, EN13697 and EN14476 (Limited spectrum).</p> <p>For bacterial disinfection add 1 shot (15ml) into a 750ml trigger bottle. For virucidal disinfection, add 3 shots (45ml) into a 750ml trigger bottle.</p>
Anti-Viral Cleaner & Disinfectant RTU	<p>Anti-Viral Cleaner & Disinfectant RTU is a ready to use, hard surface cleaner and disinfectant, tested against EN1276, EN1650, EN13697 and EN14476 (Limited spectrum).</p>
Hand & Surface Virucidal Wipes	<p>An impregnated sanitising wipe. For use on all hard surfaces and hands for cleaning and disinfection.</p> <p>EN1276 & EN14476</p>