

Cleaning premises using fogging/misting, steam, or UV treatment

Fog, mist, steam, vapour or UV (ultraviolet) treatments may be suitable options to help control the spread of infection of organisms such as, norovirus, *Clostridium difficile* and respiratory viruses. All of these are interventions at a single point in time and cannot replace any element of more continuous IPC precautions and interventions.

Fogging/Misting uses disinfectant sprayed from a Fogging/Misting machine to disperse droplets that settle on exposed surfaces.

- These machines normally use quaternary ammonium compounds, **chlorine dioxide or hydrogen peroxide-based disinfectant products**
[Control of Substances Hazardous to Health Regulations \(COSHH\)](#)

UV Light is invisible to the human eye, but if we could see it, it would come after violet on the light spectrum, hence the name “ultraviolet” light. One of the ways UV light is different from the light we can see is the way its high frequency affects organisms, such as bacteria and mould. UV light can disrupt these nasties at a cellular level, making them unable to reproduce. That’s what makes UV light useful for disinfection.

Steam cleaning uses droplets of hot water delivered under pressure, to loosen dirt, grease and sticky oils from surfaces without additional chemicals. The high temperature of this steam can kill microorganisms (thermal disinfection) if adequate equipment is used properly. Some steam cleaning machines incorporate vacuum extraction (and some have integrated microfibre tools) and help remove dirt, water and contaminants. The technology can be used for cleaning both hard surfaces and most textiles.

These cleaning treatments MUST be used in conjunction with manual cleaning regimes and NOT instead of.

They may be useful in disinfecting items within a larger space or room. Any use of these treatments for these purposes should form part of a risk assessment. Users must be competent and properly trained.

If you choose to use fogging/misting, steam, vapour or UV treatments as a way of disinfecting surfaces, discuss your requirements with your manufacturers/suppliers to help you decide if a product/system meets your needs. The treatment you use will depend on:

the size of the area to be treated, its shape and how easily it can be sealed off while delivering an airborne product

whether there are hard or soft surfaces – soft furnishings may act as a 'sink' for the airborne chemicals and emit them for a period after treatment (remove items such as sofas before treatment)

the type of business you have – some areas may be better suited to UV surface treatments than airborne chemicals or vice-versa, for example, if rooms cannot be adequately sealed to contain airborne chemicals

Ensure that you follow the manufacturer's instructions to ensure you are using the product safely and effectively.

Safety Considerations

Disinfectants applied as a fog/mist may reach harmful levels during delivery and UV systems may cause eye/skin damage if people enter an area undergoing treatment. There is a risk of burns when using steam and be careful of electrical appliances.

People should not enter rooms being treated by UV or disinfectants applied as fog, mist. Discuss with suppliers what safety features they can provide to prevent inadvertent access to a room during treatment, for example hazard-monitoring sensors and how users can assess when an area/room is safe to enter after treatment.

Locking rooms during the treatment will help to contain the emissions but other measures such as taping of doorway gaps or plastic screening off of some areas of the room may also be required. Good ventilation will also help clear the disinfectant after the treatment if this can be controlled from outside of the room.

Any equipment used to deliver the disinfectant by these means must comply with the relevant UK law. <https://www.hse.gov.uk/coronavirus/disinfecting-premises-during-coronavirus-outbreak.htm>

Fogging/misting, vapour method



If using fogging/misting, you should ensure the correct concentration of the active chemical is used to achieve disinfection. A wet surface or residue, will be left behind, which may present a hazard to anyone entering the room after the treatment is completed

Hydrogen peroxide may be used as a cold-generated mist or as a thermally generated vapour.

Non-contact disinfection does not remove the need for surface manual cleaning and, surfaces that are dirty will reduce

the effectiveness of disinfectant.

Disinfectants dispersed by fog, mist, may not result in even application to all surfaces. Hidden or 'shadowed' surfaces, or the surface underneath objects, may not be disinfected. The use of these methods in rooms of complex design with multiple surfaces may not be suitable.

Seek advice from your supplier/company representative on what treatment is appropriate for the environment you are disinfecting.



Considerations when fogging / misting

Uses	Limitations	Hazards
<p>Hard surfaces</p> <p>Equipment such as beds, chairs, tables.</p>	<p>Soft furnishings/fabrics</p> <p>These may absorb chemicals.</p>	<p>Harmful levels of disinfectants can be released.</p> <p>Eye and skin damage</p> <p>Flammable.</p>

UV method



Compared to disinfectants applied as a fogging/misting, UV treatment of surface leaves no chemical residue behind. However, UV may present a risk for injury to unprotected skin and eyes if operators do not take necessary precautions.

All sources of UV light can only destroy micro-organisms reliably where the light can fall directly on surfaces for enough time within a maximum distance – you should seek advice from your supplier/company representative.

Steam Cleaning

The steam droplets will be no hotter than 100C (higher is often claimed) but will cool rapidly as they travel from the pressurised reservoir and can be much cooler when they reach the point of discharge. This will lessen the ability to destroy organisms. The nozzle must be held sufficiently close to the target and for enough length of time so that it gets hot. The further away the nozzle from the target the more cooling occurs. The shorter the dwell time of the nozzle over the surface being cleaned, the less efficient is the heat transfer. This is a practical method for cleaning soft furnishings.



Sealing off rooms

For fog, mist or vapour treatments, gaps in doors or windows can allow leakage of hazardous chemicals back into the building beyond the area being treated. You should therefore seal potential leak points to minimise the risk of exposure to people. Equipment suppliers can provide advice on this procedure.

A suitable and sufficient risk assessment must be undertaken before Chemical sensors are placed inside the treated room, or hand-held sensors, used to monitor the concentrations of chemicals to indicate it is safe for operators to enter the room.

Rooms that are difficult to seal may not be suitable for delivering airborne chemicals and this must be decided as part of a risk assessment before starting any treatment.

The law on disinfectants

Where units/machines are used in a workplace, under the [Control of Substances Hazardous to Health Regulations \(COSHH\)](#) employers must ensure substances which may be harmful to people's health from their work activities are identified and assessed, and processes are put in place to eliminate or control risks.

COSHH also requires employers to provide information, instruction and training for all their employees who use hazardous substances such as disinfectants in their work, including the appropriate precautions and actions employees must take to safeguard both themselves and others in the workplace.