

Disinfecting premises using fog, mist, vapour or ultraviolet (UV) systems during the coronavirus pandemic

[Do not spray people with disinfectants](#)

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During the coronavirus (COVID-19) pandemic, fog, mist, vapour or UV treatments may be suitable options to help control the spread of the virus, by cleaning and disinfecting a larger space or room. Any use of these treatments for these purposes should form part of your [COVID-19 risk assessment](#)^[1]. Users must be [competent and properly trained](#)^[2].

Do not spray people with disinfectants

Do not spray people with disinfectants (in a tunnel, cabinet, or chamber) under any circumstances. Spraying a person could be harmful and does not reduce the spread of the virus. This is because transmission is usually through droplets or contact.

Attempting to disinfect someone in a disinfection system or device has no impact on the spread of the virus because droplets are created when people talk, cough or sneeze.

Disinfectants used to control or kill harmful organisms like bacteria and viruses are biocides and must comply with the [Biocidal Products Regulations](#)^[3].

The risk of COVID-19 transmission must be managed using control measures that have been proven to work including [social distancing, frequent cleaning and regular hand washing](#)^[4]. Any relaxation of these proven, effective control measures can increase the risk of viral transmission.

Only use products authorised in the UK

Only the Health and Safety Executive can authorise biocides in the UK. Any statement that the biocide is endorsed by another regulatory body or organisation such as the World Health Organisation or the Centers for Disease Control and Prevention is not relevant and does not override UK Biocidal Products Regulation.

Sometimes companies advertise that the active ingredients and biocide used in these types of systems are completely non-toxic, environmentally friendly, harmless or natural, such claims are illegal. Even where products are not specifically labelled as hazardous, when applying such agents in fogs, or fine spray mists that may come into contact with the eyes and upper airways, there is evidence that in susceptible people (such as asthmatics) airway reactions can be provoked and there is no easy way to predict these reactions.

Choose the correct treatment

If you choose to use fog, mist, vapour or UV treatments as a way of cleaning and disinfecting surfaces, discuss your requirements with your manufacturers/suppliers (this may include fumigators), 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 if 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 some time after treatment (it may be possible to 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

Fog, mist, vapour method

If using the fog, mist, vapour method you will need to ensure the correct concentration of the active chemical is used, this means there is enough for it to work properly, but not so much as to leave a residue which may remain at unsafe levels for some time after treatment ends.

There are different types of source disinfectants that can be applied as a fog, mist or vapour treatment. Some are liquid disinfectants used to create a fog, mist or vapour, such as hydrogen peroxide, others are generated from gases, for example ozone from air. Seek advice on what is appropriate to the environment that requires treatment.

UV method

An advantage of UV over disinfectants applied as a fog, mist or vapour is that no chemical residue is left behind.

Rooms with complex configurations/interior designs may not be suitable for UV treatments due to the limitations of shadowing effects, unless multiple systems can be deployed. Similarly, very small spaces, such as small sanitary areas, may not be suitable for treatment via UV carousel as they need to be a minimum distance from walls etc to be deployed safely. Some disinfectant technologies are scalable so are typically more flexible in this respect.

Avoid harm

Disinfectants applied as a fog, mist or vapour may reach harmful levels during delivery and UV systems may cause eye/skin damage if people enter an area undergoing treatment. Discuss with suppliers what safety features they can provide to prevent inadvertent access to a room during treatment. For example, safety sensors, simply locking rooms during treatment if feasible, or safety signage as part of a safe system of work.

The equipment used to deliver the disinfectant must comply with the relevant UK law on the design and supply of products which, for machines, is the [Supply of Machinery \(Safety\) Regulations](#)^[5].

Do not disinfect large outdoor spaces

In outdoor spaces, large-scale spraying or disinfecting in areas such as streets or open marketplaces for the COVID-19 virus or other pathogens is not recommended. Streets and pavements are not considered as routes of infection for COVID-19. Spraying disinfectants, even outdoors, can be dangerous to people's health and cause eye, respiratory or skin irritation or damage.

Supply and manufacture of disinfectants

The disinfectant applied as a fog, mist or vapour treatment must comply with the Biocidal Products Regulations (BPR). This includes the generation of ozone or free radicals. Please note the use of UV to disinfect is not covered by the BPR.

Under BPR it is the disinfectant, or the chemical used to generate the disinfectant, added to the machine, that is the biocidal product. Please note that the machine itself is not covered by BPR.

Suppliers of fog, mist or vapour units/machines should ensure that any disinfectant products they supply or recommend using with the unit/machine comply with BPR.

There is separate guidance on the regulatory requirements for surface [disinfectants manufactured and supplied during the pandemic](#)^[6], which applies to disinfectant products^[6] applied via fog, mist, vapour units and other machines.

Manufacturers of disinfectant products are responsible for ensuring that their products are suitably effective, including meeting any necessary testing standards. They are also responsible for providing information and

instructions for the user on the product label.

The law on chemicals

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

Where units/machines are used in a workplace, under the [Control of Substances Hazardous to Health Regulations \(COSHH\)](#)^[7] 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.

Sealing off rooms

Rooms treated by UV or disinfectants applied as fog, mist or vapour should be empty and sealed off to avoid risk of human exposure to the potentially harmful treatments. Disinfectants may reach harmful levels during delivery and UV systems may cause eye/skin damage if people enter an area undergoing treatment. You may also consider safety sensors that can shut off UV systems if a room is inadvertently entered during treatment.

Rooms that are very difficult to seal may not be suitable for delivering airborne chemicals.

Page last reviewed: 1 December 2020

Next review due: 31 December 2020

Related content

- [Cleaning your workplace to reduce risk from coronavirus \(COVID-19\)](#)^[8]
- [HSE's general fumigation guidance](#)^[9]
- [Supply and manufacture of disinfectants during the pandemic](#)^[10]

Link URLs in this page

1. COVID-19 risk assessment
<https://www.hse.gov.uk/coronavirus/working-safely/risk-assessment.htm>
2. competent and properly trained
<https://www.hse.gov.uk/coshh/industry/fumigation.htm>
3. Biocidal Products Regulations

- <https://www.hse.gov.uk/biocides/eu-bpr/index.htm>
4. social distancing, frequent cleaning and regular hand washing
<https://www.hse.gov.uk/coronavirus/index.htm>
 5. Supply of Machinery (Safety) Regulations
<https://www.hse.gov.uk/work-equipment-machinery/uk-law-design-supply-products.htm>
 6. disinfectants manufactured and supplied during the pandemic
<https://www.hse.gov.uk/coronavirus/hand-sanitiser/index.htm>
 7. Control of Substances Hazardous to Health Regulations (COSHH)
<https://www.hse.gov.uk/coshh/index.htm>
 8. Cleaning your workplace to reduce risk from coronavirus (COVID-19)
<https://www.hse.gov.uk/coronavirus/cleaning/index.htm>
 9. HSE's general fumigation guidance
<https://www.hse.gov.uk/coshh/industry/fumigation.htm>
 10. Supply and manufacture of disinfectants during the pandemic
<https://www.hse.gov.uk/coronavirus/hand-sanitiser/index.htm>

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