

Updated Information: -

Coronavirus COVID-19 & The Compressed Air System

Early in the pandemic there were claims that compressed air may be potential source of Corona virus COVID-19, requiring the installation of sterile air filters (or more frequent filter sterilisations and element changes) to prevent the contamination of food, beverage or pharmaceutical products.

At this time BCAS issued a statement of guidance quoting the World Health Organisation position that Coronavirus COVID-19 was not an airborne virus. On 9th July 2020 the WHO updated their guidance to include the **possibility** of airborne transmission of the virus, including the possibility of :-

Short-range aerosol transmission, particularly in specific indoor locations, such as crowded and inadequately ventilated spaces over a prolonged period of time with infected persons cannot be ruled out. However, the detailed investigations of these clusters suggest that droplet and fomite transmission could also explain human-to-human transmission within these clusters. Further, the close contact environments of these clusters may have facilitated transmission from a small number of cases to many other people (e.g., superspreading event), especially if hand hygiene was not performed and masks were not used when physical distancing was not maintained
<https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions>

Therefore we are updating our guidance to include the possibility of airborne / aerosol transmission.

This update by the WHO **does not** impact the advice given about the risks and management of Coronavirus and your Compressed Air System.

There is no scientific evidence to support the claims that;-

- 1. Compressed air is a potential source of Coronavirus COVID-19**
- 2. Compressed air used in the manufacturing of food, beverage or pharmaceutical products can contaminate these products with the virus.**

Put simply

- Compressor rooms are well ventilated
- There is not a large risk of people coughing sneezing or breathing into the compressor inlet for long periods of time
- The compressor has 2 filters (its panel filter and intake filter)
- During compression, compressed air is higher than the temperature needed to kill COVID 19
- Good purification systems typically treat the compressed air for aerosol significantly smaller than the aerosol sizes mentioned (human generated aerosols <5 micron, good filtration down to <0.01 micron)

Air is drawn into an air compressor and first through panel filters and then through intake filters on its way to the compression chamber. Ambient air contaminants would have to remain in aerosol form to pass through panel and intake filters in order to enter the compressor intake.

This is highly unlikely, but even if panel and intake filtration were compromised, the contaminant would not remain in aerosol form during compression. At the point of compression the air temperature is high, the heating time is short and with the compression processes, viruses do not tend to survive.

It is documented that heat at 56°C kills the coronavirus below the compression temperature https://www.who.int/csr/sars/survival_2003_05_04/en/

Viruses are different from bacteria in that they need a living host in order to reproduce and therefore do not demonstrate the behaviour of multiplying in warm, wet, under-treated compressed air.

There is no scientific evidence to support the claims that compressed air is another potential source of Coronavirus COVID-19 or that compressed air used in the manufacturing of food, beverage or pharmaceutical products can contaminate these products with the virus.

For further information speak to your BCAS member and if in any doubt refer to Food and Beverage Grade Compressed Air Best Practice Guideline 102 for compressed air specification that inhibits the growth of micro-organisms for direct contact applications

Vanda Jones
Executive Director

BCAS Best Practice Guideline 102

To help avoid any contamination issues, BCAS advocates following Best Practice Guideline 102, in particular the specification for direct contact applications.

The best practice guidance (BPG102) was prepared in conjunction with the British Retail Consortium Trading Limited (BRC) and is designed to help processors make informed decisions relating to compressor systems operating at a pressure greater than 0.5 bar.

The guide is available for free download from the BCAS website at <https://www.bcas.org.uk/article/bcas-food-grade-compressed-air-best-practice-guideline-5.aspx>

This guidance recommends using a dewpoint of -40 degrees C to inhibit the growth of micro-organisms, and filtration to reduce the micro-organisms and particulate.

The specification requires the installation of a minimum of two aerosol reduction filters (down to 0.01mg/m³ of oil aerosol and particle reduction down to 0.01 micron).

These protective measures will ensure that, should the COVID 19 or other virus still survive the heat of compression, aerosol reduction filters in the compressor room combined with a very low dewpoint and point-of-use dry particulate filters will remove any risk from compressed air.

In addition, users should follow advice in BPG 104 entitled 'The Filtration and Drying of Compressed Air', which can be downloaded at www.bcas.org.uk/airtreatment. It is designed to help demystify not only the selection of the correct air treatment equipment but to provide practical advice

on which contaminants can be present and their impact on the processes that compressed air is being used for.

Strict maintenance program

A strict compressed air system maintenance program is required for direct and Indirect contact air when used in food and pharmaceutical production. BCAS has been advising end-users to continue their routine checks, adhering to social distancing guidance throughout servicing.

Customers should use proprietary spare parts and continue to follow recommended maintenance procedures and guidelines throughout this time. The BCAS website provides a BCAS Member finder tool to help users find a qualified compressed air professional at www.bcas.org.uk/directory/