

Water filters and filtration

Guaranteeing safety and quality

While many consumers are often concerned with the external appearance of a water dispenser or coffee machine, often it's what's on the inside that counts. Water filters and water treatment solutions are vitally important components which guarantee the safety and quality of dispensed beverages. With concerns about hygiene at an all-time high due to the Covid-19 pandemic, *Refreshment* investigates how the pandemic and other trends are affecting the demand for filters and other water treatment solutions.

Rising demand

In recent years, the increased presence of waterborne pathogens such as legionella, PFAS and more in countries including the US has been a concerning development, as they represent threats to the long-term health of consumers. While most waterborne diseases are transmitted through bacteria – not viruses – the Covid-19 pandemic has heightened consumer concerns over hygiene and safety, even though there is little to no evidence which suggests Covid-19 is a waterborne pathogen.

Despite this, consumer caution about the safety of drinking water has increased, and so too has the demand for water dispensing solutions which guarantee safe drinking water. As a result, this has led to rising demand for water filters and other water treatment solutions.

Of course, water filters such as reverse osmosis (RO) filters have always formed a key bulwark against contaminants and pathogens in water, and demand for these solutions appears to be increasing. Indeed, Emma Redford, marketing director at UK water filter distributor H2O Direct, told *Refreshment* that demand for bacterial removal filters has increased substantially during the pandemic: "With Covid-19 being at the forefront of everyone's thoughts, bacteria and microplastic removal filters are an obvious trend currently, with demand for these filters way above any normal level."

"There has been a significant increase in demand for bacterial removal filters with price points being an important element. Suppliers have had more time during 'lockdown' to have a good look at

their current filter supplier and check that the filters are actually the right ones for the job and then compare prices with other suppliers to save money where they can.

"Filtration is paramount in providing high-quality water and with Covid-19 there has never been a more important time for water filters to be used."

This idea that scrutiny over water safety has increased due to the pandemic was reasserted by Paula Hsieh, marketing & sales/brand manager at Taiwan-based filter manufacturer Caware: "Due to Covid-19, people are paying more attention to life safety, and drinking water is also part of life safety. People are focusing more on drinking water safety as well."

"Their main concern is if the filters are effective against bacteria or viruses. In other words, filter manufacturers must be able to offer filters that can effectively remove bacteria or viruses to ensure water safety."

Even before the pandemic struck, one rising trend in the water dispensing industry has been the increasing adoption of UVC LEDs as a water treatment solution. UVC LEDs are internal components which act alongside conventional water filters in beverage dispensers to destroy pathogens in water using ultraviolet light.

Kevin Kahn, market development manager, EMEA at Crystal IS – a leading producer of UVC LEDs for water dispensers and other applications – told *Refreshment*: "Water cooler manufacturers first showed interest in UVC LED technology when facing pressure from end-users to reduce their reliance on single-use plastic. No more cups and

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The FX range of water filters can remove bacteria and microplastics from drinking water

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no more bottled water. This has increased the reliance on internal disinfection systems for water quality, and UVC LEDs are the most adequate technology for on-demand microbial disinfection.

"With the pandemic, these requirements have been reinforced by the necessary reduction in planned servicing and thus the need for more reliable disinfection units that do not require "warm-up" upon being powered or fail unpredictably, and that can be much closer to the point of dispense."

In many countries around the world, the pandemic has forced offices, schools, universities and more to close. But what does this mean for water fountains and other dispensers which have been left unattended and unused for months? Kahn claimed that the likelihood of harmful pathogens proliferating in these units has increased, so this is where water treatment solutions such as UVC LEDs would play a vital role, should they be included: "I would recommend that facilities such as schools, co-working spaces, offices, and hotels [which are reopening] first take a water sample from their water coolers or tap. In most cases, residual water has been left stagnating for the better part of the past four months, and it is likely that certain biofilm has formed and pathogens have been dispensed.

"Additionally, preventative measures such as reduced use of shared spaces means that the problem will likely grow with time. Having the ability to disinfect water at the point of dispense is more than a polishing step. It is a necessary barrier to pathogens that have formed in the water path that are not likely to be sanitised anytime soon."

Trust is paramount

With threats to water quality and safety now a concern for businesses and consumers alike, ensuring that water dispensers are safe, reliable and trustworthy is absolutely essential. While UVC LEDs can certainly add an extra, vital line of defence against pathogens, businesses should always ensure the filters they are using are certified by a reputable source such as NSF International or the Water Regulations Advisory Scheme (WRAS), both of which have rigorous testing procedures to ensure that filters are effective .

The importance of certification and working with a trustworthy supplier was supported by Hseih: "General end-users do not have

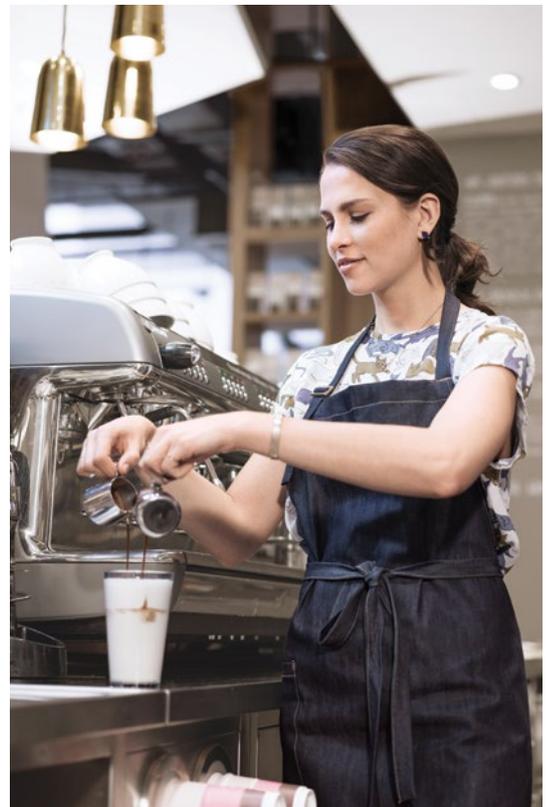
qualified equipment that is able to validate the effectiveness of the filter by themselves. Under these circumstances, it is crucial to choose a trustworthy brand."

According to Hseih, the key factors to assess when exploring the reliability of a water filter is: "Whether the water filter manufacturer can offer certified products or validate the effectiveness of filters periodically."

"Even beyond safety, there are many factors that businesses need to consider when choosing the right filter for their needs, as there is no one-size-fits-all solution. Therefore, choosing a supplier which has the right expertise and can guarantee reliable products is crucial, according to Redford: "Trust is paramount when selecting your supplier as they will be able to guide you to the right filter for the right job. Filter reputation is backed up by strict certification such as WRAS or NSF, which will give some assurance when selecting quality goods."

Quality counts

For hot beverages such as coffee or tea, water quality is arguably the most important factor in crafting a high-quality end product. Environmental factors can alter the qualities of water depending on the country, region or even





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local area, so choosing a filter which guarantees optimum performance should be a key priority for businesses.

The importance of choosing the right filter for your needs was asserted by Samantha Scoles, business manager at Brita Professional: "When it comes to choosing the right filter, there's no-one-size-fits-all, as the mineral content in water varies drastically between regions, and even street to street. Different mineral content determines the hardness of a water supply, altering the protection levels needed.

"A water filter on equipment should be a key priority. Using the right water filter helps to remove unwanted particles, metals, minerals and chlorine, as well as limescale which can have a negative effect on the taste, appearance and aroma of tea and coffee; not to mention causing expensive breakdowns and limited efficiency further down the line.

"Operators in the water and coffee industry should work with their supplier to identify the best filter to suit the specific characteristics of their water supply."

One rising trend is the desire to take greater control of water by adjusting factors such as pH balance. This is made possible by solutions such as variable bypass filters, such as the VH-IEN range

distributed by H2O Direct. These solutions allow the user to alter the blending of the water through the filter, where the existing hardness or pH level needs to be changed, in order to ensure optimum quality and prevent limescale buildup. Redford continued: "The ability to vary the amount of water bypassing through a filter is essential in the coffee industry, twinned with an assurance of pH stability throughout a filter's life to ensure the best coffee drink.

"Scale reduction is obviously a crucial element when sourcing a filter for hot water drink dispensing as without this feature, tanks such as what you might find in a hot water dispenser will quickly have a large scale build-up causing breakdowns and costly replacement of parts, especially on seals."



Sustainability is still key

While the pandemic is affecting our day-to-day lives so significantly, it can be easy to lose sight of other issues. But the climate crisis isn't going away and sustainability is still a hugely influential priority for both businesses and consumers.

This was reiterated by Scoles: "Although health and hygiene have been at the forefront for businesses over the last few months, sustainability is still a highly topical and relevant consideration when it comes to purchasing a water filter.

"Sustainability is still a big priority for businesses. In fact, research from Brita Professional revealed that 42% of businesses want to partner with sustainable suppliers to help with green targets. This is also extremely important for customers, with two-thirds (67%) of UK consumers stating that they would boycott brands that lack an ethical conscience. Working with sustainable suppliers is key for this industry and one way to do this is by using recyclable water filters and partnering with brands who have ethical credentials."

Brita has established a recycling programme for used cartridges, which is carried out at its on-site recycling plant in Germany. The company also has a dedicated 'green team' to improve the sustainability of its operations, and reports back to businesses about the return and recycling of water filters; ensuring that businesses can track and prove that they are doing everything they can to help the environment.

The importance of operating sustainably and choosing a filter supplier with genuine environmental credentials was reiterated by Redford, who concluded: "Ensuring suppliers of water filters recycle their filters correctly is the first step and proof of recycling that is unique to the customer's recycled filters and not just a general certificate is essential.

"Filter manufacturers are considering the elements of filter design much more with emphasis on overall percentages of filters that can be recycled and ease of recycling/re-use." ●

Working with sustainable suppliers is key for this industry

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