Is Your Plant Air Meeting Quality and Safety Standards?

Controlling Hidden Food Safety Hazards Carried by Compressed Air with Point-of-Use Filtration

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Compressed air is an essential utility for many food production facilities, and its applications—such as bagging, sparging and mixing, drying, and exhaust—may bring compressed air into contact with food products. Just like any other point in a plant's process, the potential food safety risks associated with compressed air usage must be considered to implement proper control steps.

The Invisible Hazards Hiding in Compressed Air Systems

Food safety and quality (FSQ) professionals, facilities managers, and other parties responsible for ensuring that food is produced hygienically are likely already aware of the invisible threats to food safety throughout a plant, including harmful microorganisms and particles of unclean substances. If left untreated, compressed air is a vehicle that can carry pathogens and oil, water, and dirt particles throughout a facility to the product, introducing contaminants to foods that have the potential to sicken the final consumer, which could lead to costly and reputation-damaging recalls. Although important, compressor room system filtration cannot eliminate microbial harborage sites and biofilms in the downstream compressed air piping system—a further, final line of defense is required to ensure the suitability of compressed air for food production; specifically, point-of-use filtration.

Compliance with Regulatory Requirements and Industry Standards for Compressed Air Used in Food Production

Additionally, untreated compressed air could prevent a food business from achieving compliance with federal regulatory requirements and voluntary industry-standard auditing schemes. Aside from the critical importance of staying compliant with government-mandated standards, such as those set forth in the U.S. Food and Drug Administration's (FDA's) Code of Federal Regulations, receiving certification from voluntary auditing schemes communicates to a company's partners along the supply chain that food safety best practices are being upheld during the production of a product.

Major industry-standard voluntary auditing schemes—such as Safe Quality Foods (SQF), British Retail Consortium (BRC), and FSSC22000/ ISO 22000 standards—are based in Good Manufacturing Practices (GMPs) and are endorsed by the Consumer Goods Forum's Global Food Safety Initiative (GFSI), a global initiative that was established to increase consumer trust by improving food safety through corporate responsibility and safer food supply chains. FDA and the majority of GFSI-endorsed auditing schemes require compressed air and other gases used in a food production process to be treated in such a way that food is not contaminated by microbes or particles, without prescribing a method for doing so.

> *The recommended final stage of filtration in these food contact areas should have a rating of 0.01 micron with an efficiency of 99.999% (or as determined by appropriate risk analysis).*

— 8.1Edition of the SQF code guidance document, published October, 2019 (SQF module 11.5.5)

SQF Code Edition 8.1

SQF Code Edition 8.1 provides the most specific recommendations for treating compressed air to ensure food safety, recommending that, in food contact areas, point-of-use filtration should be applied, and that point-of-use filtration should have a rating of 0.01 micron with an efficiency of 99.999 percent (or an efficiency determined by appropriate risk analysis). FDA also recommends sanitation efficiency of 99.999 percent or better. This level of sanitation efficiency requires a filtration system that is able to achieve a 5-log reduction of microbial particles from an airstream.

The Solution: 3-Step Compressed Air Filtration for Point-of-Use Areas

Compressed air experts agree that 3-stage compressed air filtration for point-of-use areas is the best line of defense against the introduction of unwanted hazards in the airstream to food products. This filtration should be placed as close as possible to the point where air directly or indirectly comes into contact with food. Specifically, these stages involve: Parker Finite point-of-use filters for your facility's compressed air system here.

Stage 1

Remove bulk liquid and particulate contamination down to 0.1 micron at 93 percent or greater coalescing efficiency, with an automatic drain in the filter.

Stage 2

Remove oil and water aerosols and smaller particulate matter down to 0.01 micron at 99.99 percent or greater coalescing efficiency, with an automatic drain in the filter.

Stage 3

Remove microbial contamination down to 0.01 micron at 99.999 percent or greater particulate removal efficiency (5-log reduction), with a sterile air filter.

Additionally, it is important to incorporate an air dryer into a compressed air system to prevent the growth of microbes throughout the system. This dryer should bring the compressed air to a dew point of -40° F/C. In some cases, it is not possible to sufficiently dry the air to a level that would prevent microbial growth, rendering filtration even more critical.

Parker Finite filters for food contact applications deliver up to 99.9999 percent efficiency at 0.01 microns, meeting and exceeding current food safety requirements and recommendations for compressed air published by FDA and GFSI-accredited auditing schemes. These 3-stage filters are available in aluminum for non-washdown applications, and in stainless steel to hold up to the harshest chemicals in washdown environments. Conveniently, Parker Finite filters are cost-effective and readily accessible, as they are available through a wide range of distributors. Established in 1971, Finite's products are backed by a history of success in helping food production facilities ensure their products are produced efficiently and hygienically.

Do not let uncontrolled compressed air jeopardize your food business—join the multitudes of food production facilities that trust Parker Finite products to ensure their processes are compliant with compressed air standards and to safeguard their products from microbial contaminants and other particulates.

Learn more about why you can trust Parker Finite for food safety assurance and how you can acquire Parker Finite point-of-use filters for your facility's compressed air system by contacting our factory at 800-343-4048.

3-Stage Aluminum Filters for Non-Washdown Applications

Finite 3-Stage Aluminum Filters deliver up to 99.9999+% efficiency at 0.01 microns. Finished with a durable powder coating that will hold up to the dirtiest compressed air systems.

3-Stage Stainless Steel Filters for Washdown Applications

Finite 3-Stage Stainless Steel Filters deliver up to 99.9999+% efficiency at 0.01 microns. 304 stainless steel construction will hold up to the harshest washdown chemicals.

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