

# 8 Reasons to Use Dry Steam Cleaning



# 08

## Reasons to Use Dry Steam Vapor for Food Safety and Sanitation

Sanitizing production equipment safely and efficiently is important for food and beverage producers, enabling them to create healthy products and avoid liability. In recent years advances in vaporization technology have driven more and more processing facilities to adopt dry steam vaporization as a sanitary technique instead of using traditional methods which use chemicals or hot water.

Using dry steam vapor to sanitize conveyor belts and other machinery comes with a host of advantages. This process is safer, more cost effective, and more environmentally friendly than other cleaning methods. In this eBook we explore eight reasons why you should use dry steam vapor for food safety and sanitation.

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## Chemical-Free Cleaning and Sanitizing Capabilities



Traditionally, food and beverage processing plants relied on powerful chemical agents to clean and sanitize equipment. These chemical cleaners often contain toxic substances that can injure sanitation workers and can cause harm and illness to customers. Furthermore, chemical cleaners can become hazardous when applied inconsistently with label directions.

Many facility managers that oversee the food safety and sanitation programs recognize that it's important to minimize chemical risks to their employees and the environment and therefore leave potentially harmful chemical cleaners out of the equation. In addition, **OSHA** has set up “enforceable permissible exposure limits (PELs) to protect workers against the health effects of exposure to hazardous substances, including limits on the airborne concentrations of hazardous chemicals in the air.”

Chemicals come with additional risks. Many cleaning agents deploy strong oxidizers, but in order to defend against bacterial pathogens, these oxidizers must “react for extended periods with use of adequate concentration and appropriate temperature” (**Food Safety Magazine**). Day-to-day work conditions or personnel may not allow enough “dwell” time for such oxidizing chemicals to work effectively. What's more, relying on the same oxidizers for long periods of time may allow microorganisms to create evolutionary defenses to resist these chemicals.

In contrast, dry steam cleaning methods are very effective at removing animal fat, protein soils, grease and oil, plant matter, all types of residual soils from production runs, and other similar substances from surfaces. They also prevent cross-contamination across equipment. Best of all, they accomplish this without the risks that come from using industrial chemicals.

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## Drastic Reduction in Water Consumption



According to the **United Nations**, industrial water use accounts for 22% of global water usage. Industrial water hoses spray up to 10–12 gallons of water per minute during sanitation processes, meaning that one hose operating eight hours a day can consume over 170,000 gallons of water per month.

**22%** of the world's water use is industrial

In contrast, cleaning with dry steam vapor uses ounces per minute as compared to gallons per minute, with very little or no water to the drain. This results in a massive reduction of water used for everyday industrial purposes, which could lead to a tidal shift towards sustainable cleaning and sanitation practices.

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## Higher Levels of Sanitation



Cross-contamination of food substances is a **significant health risk in the U.S.** and around the world. It also poses a liability risk for food industries. For instance, a recent outbreak of E. coli in Milwaukee, WI, was caused by cross-contamination and led to nine lawsuits against the food supplier.

Steam sanitation systems greatly reduce the risk of cross-contamination. According to the **European Cleaning Journal**,

“ It is a fallacy to believe that bactericidal efficacy is achieved through the killing of pathogens as this method of sanitation only serves to encourage antimicrobial resistance over time. It is instead the safe removal of all debris which offers the highest levels of bactericidal efficacy whereby all pathogens are inevitably removed from any given surface. ”

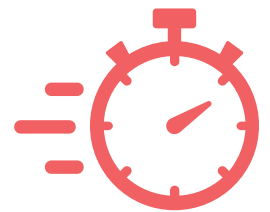


Dry steam cleaning systems efficiently remove bacterial pathogens by breaking down the cellular cohesion between microorganisms and the surface structure through intense heat. These steam systems use temperatures between 212F – 340F (100 - 170°C ), depending on the application, to boil away the biofilms that protect microorganisms.

Subsequently, sanitation workers can either vacuum up bacterial debris using built-in vacuums or manually remove them with microfiber cloths. Independent studies have shown time and again that dry steam cleaning systems kill greater amounts of bacteria when compared to other techniques.

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## Increased Cleaning Efficiency



Dry steam vapor cleaning solutions are more efficient than other cleaning techniques. This process requires less downtime, and employees can operate the tools remotely. By letting automated steam cleaning equipment do the work for you, you can dedicate resources to other matters, increasing your facility's overall productivity.

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## Labor Savings and Faster Turnaround

Traditional industrial sanitation methods involve a lot of time and work. Employees generally have to cover all electrical components with plastic to prevent water damage. Only after covering every exposed piece of electrical equipment can employees start operating the hoses by hand. Sometimes this takes hours, and it's always a messy procedure.



In contrast, **Electro-Steam's brushless cleaning system and other accessories** only require a few minutes to attach. This allows employees to clean hands-free and even perform other tasks while the system does the heavy lifting thusly saving you time and labor costs. This method also greatly reduces the amount of production downtime that occurs between cleaning sessions.

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## Minimal Risk of Water Damage

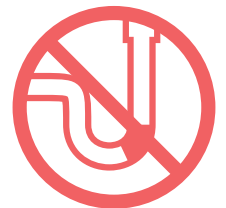
During liquid-based cleaning and sanitation, it's vital to protect not only electrical connections but also any sensitive components in the production machinery. This includes conveyor belts, since cracks or tears in belts could cause mechanical issues and production delays later on.



Heat from dry steam acts as a powerful cleaning agent without risking water damage to sensitive machinery. The steam's heat saponifies dirt and grease, converting fatty or oily substances into soap. Furthermore, dry steam can penetrate machinery's surface without the use of harmful/corrosive chemicals or aggressive water cleaning. This technique allows workers to thoroughly clean sensitive equipment without putting it at risk.

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## No Wastewater Down the Drain, Meaning Less Effluent Issues



How a plant disposes of effluent water (wastewater that runs through the facility and into the sewage system) greatly affects its environmental impact. Workers using traditional cleaning methods would send hundreds of gallons of dirty water down facility drains every day. Not only does this consume excess water and other resources, but it also clogs drains and releases harmful chemicals into the facility's surrounding community. In contrast, when dry steam is used correctly nearly all the residual water is typically evaporated.

Dry steam cleaning solutions bypass these issues. Moreover, cleaning with dry steam allows plants to avoid noncompliance fines from the EPA's effluent regulations.

What's more, dry steam cleaning helps your clients compete against other vendors. Many major companies require prospective vendors to submit an environmental impact report



as part of the validation process. Companies that use a dry steam solution will have a competitive advantage over other vendors.

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## Minimal Risk of Water Damage



Dry vapor cleaning leaves no pools of water on the production floor, and employees are safer when they're not handling aggressive streams of water.

Dry steam cleaning also helps you comply with OSHA standards like 1910.22(a)(2):

“ The floor of each workroom is maintained in a clean and, to the extent feasible, in a dry condition. When wet processes are used, drainage must be maintained and, to the extent feasible, dry standing places, such as false floors, platforms, and mats must be provided. ”

# Using Dry Steam Vapor

Dry steam cleaners offer many industrial advantages for companies. They boost your facility's environmental friendliness while helping you save money and time. Most importantly, adopting a steam vapor cleaning program will result in healthier products and safer employees.

Electro-Steam has led the field in dry steam vapor cleaning since 1952. With over 65 years of experience, we're one of the oldest and most distinguished manufacturers of electric steam generators. Electro-Steam units can be used for many cleaning applications, including:

- Refrigeration systems
- Storage and blending tanks
- Conveyor belts
- Industrial equipment for baking, dairy, beverage and packaging processes

We produce a number of high quality food safety sanitation systems, such as our **Eagle Series Dry Steam Cleaners** and our **Conveyor Belt Cleaning Systems**.

If you'd like to learn more about our state-of-the-art steam-generating product line, visit [our website today](#).



# About Us

Electro-Steam offers dry steam cleaners and steam generators for companies in food and beverage, packaging, wineries, breweries, and other markets. In addition to our steam cleaning systems, we have also been an OEM manufacturer of electric steam generators since 1952 – one of the oldest manufacturers of these products in the United States. With years of experience over a wide range of industries and applications, Electro-Steam is recognized as the industry leader in the design and manufacturing of dry steam vapor generation, cleaning, and sanitizing systems that are superior to other equipment.

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