



Types of Sanitizers

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Chlorine-Based Sanitizers

Examples:

- Sodium Hypochlorite
- Chloramines
- Chlorine Dioxide

Work by oxidizing cell membranes and disrupting cellular functions.

Particularly effective in controlling biofilms and can be used in various concentrations depending on the specific application.

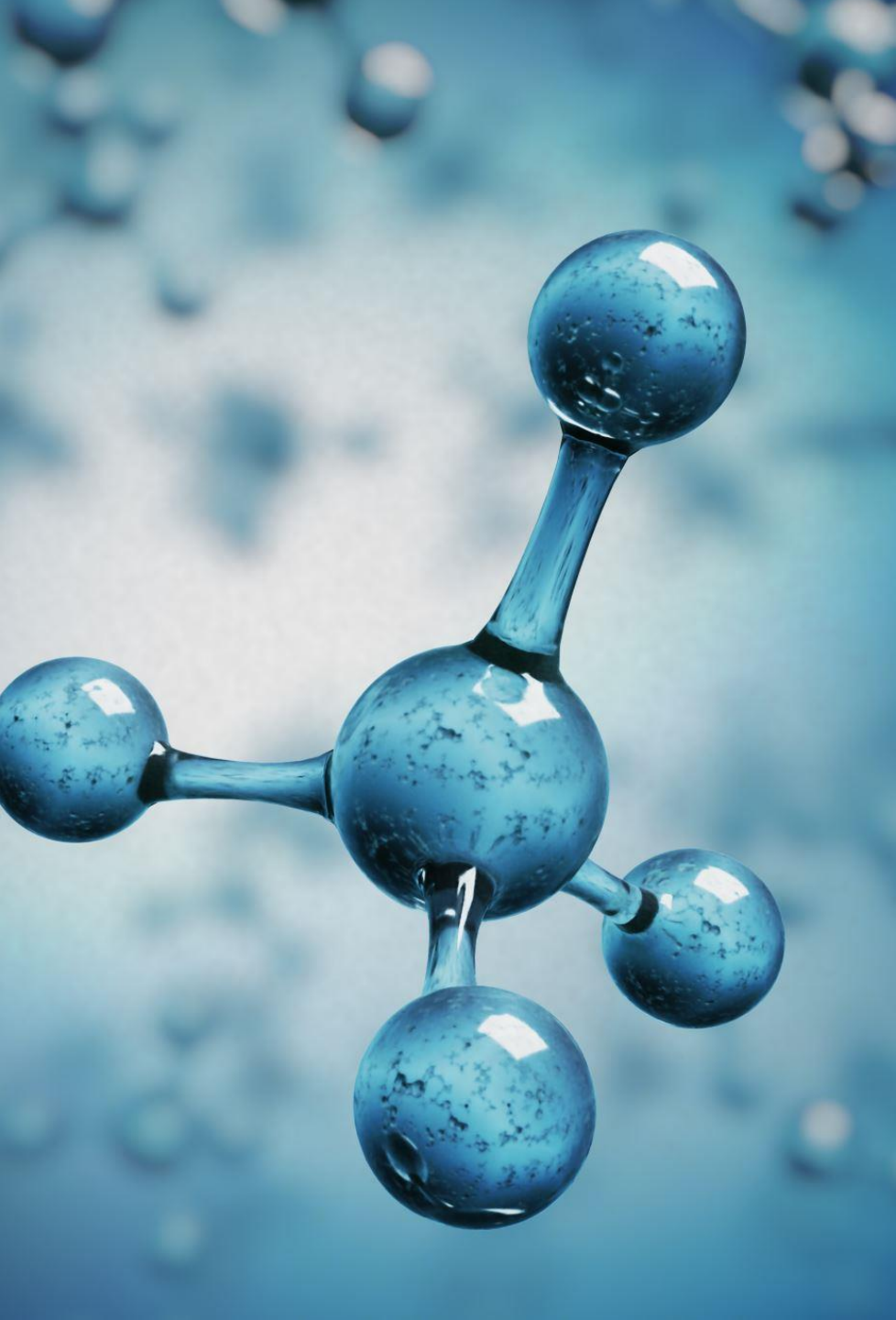
Pros of Chlorine-based Sanitizers

- 1. Effective Wide Spectrum Disinfection:** highly effective at killing bacteria, viruses, and other pathogens on surfaces, equipment, and in water used for processing, helping to reduce the risk of contamination.
- 2. Relatively Inexpensive:** often cost-effective compared to other sanitizing agents, making them a popular choice for large-scale operations.
- 3. Fast Action:** typically provide rapid disinfection, which is essential in a fast-paced meat processing environment

Cons of Chlorine-based Sanitizers

- 1. Can be corrosive** to certain materials, including stainless steel, if not properly diluted or if left in contact for too long, leading to damage to equipment and infrastructure over time.
- 2. Residual Taste and Odor:** If not rinsed thoroughly, which may be undesirable to consumers.
- 3. Health and Safety Concerns:** Chlorine gas can be released if mixed with certain acidic or ammonia-containing cleaning agents, posing health risks to workers. Also, exposure to high levels of chlorine gas can be hazardous.
- 4. Environmental Impact:** can have negative environmental impacts if not properly managed. Discharge of chlorine residues into water bodies can harm aquatic life and ecosystems.
- 5. Regulatory Compliance:** Strict regulations govern the use and concentration of chlorine-based sanitizers in food processing facilities.

Overall, while an effective sanitizer, careful handling, proper dilution, and thorough rinsing are essential to mitigate potential risks and ensure food safety and regulatory compliance.



Quaternary Ammonia Sanitizers

“Quats”

Example: UltraQuat

They work by disrupting cell membranes and denaturing proteins in microorganisms.

Pros of Quat Sanitizers

- 1. Effective Disinfection:** effective against a wide range of microorganisms including bacteria, viruses, and fungi.
- 2. Non-Corrosive:** Unlike chlorine-based sanitizers, typically non-corrosive to most materials commonly found in food processing equipment, including stainless steel, plastics, and rubber.
- 3. Longer Lasting:** can provide longer-lasting disinfection compared to other types of sanitizers, helping to maintain sanitized surfaces for extended periods.
- 4. No Residual Taste or Odor:** When used correctly and rinsed properly, leave behind no residual taste or odor, minimizing the risk of affecting the sensory characteristics of the food.
- 5. Low Volatility:** generally less volatile compared to chlorine-based sanitizers, reducing the risk of inhalation exposure for workers.

Cons of Quat Sanitizers

- 1. Reduced Effectiveness in Presence of Organic Matter:** May have reduced effectiveness in the presence of heavy organic contamination. Proper cleaning is necessary for optimal performance.
- 2. Potential Allergic Reactions:** Some individuals may experience allergic reactions or skin sensitivities when exposed, especially at higher concentrations.
- 3. Regulatory Compliance:** Compliance with regulatory requirements regarding the concentration and use is essential.
- 4. Resistance Development:** Prolonged and repeated use may contribute to the development of microbial resistance over time, necessitating rotation with alternative sanitizers or periodic reevaluation of sanitation protocols.

Overall, quats offer effective disinfection with several advantages, but careful attention to proper usage, cleaning procedures, and regulatory compliance is necessary to maximize their benefits while minimizing potential risks.

Peroxide-based Sanitizers

- A versatile and effective sanitizer that is approved for use in organic food production and processing by certifying bodies such as the USDA National Organic Program (NOP)
- Considered organic-friendly because it breaks down into water and oxygen upon use, leaving behind no harmful residues.
- It is effective against a wide range of microorganisms, including bacteria, viruses, yeasts, and molds
- Non-toxic and environmentally friendly, making it a preferred choice for organic food processing facilities striving to maintain strict organic standards while ensuring food safety and sanitation.

Peracetic Acid (PAA)

Pros:

- 1. Broad-Spectrum Antimicrobial Activity:** highly effective against a wide range of microorganisms
- 2. Rapid Action and Short Contact Time:** works quickly to kill microorganisms, allowing for shorter contact times compared to some other sanitizers.
- 3. Effective in Cold Water:** Unlike some sanitizers that require warm water for optimal effectiveness, remains effective in cold water temperatures.
- 4. Biodegradable and Environmentally Friendly:** breaks down into harmless byproducts, making it environmentally friendly and safe for wastewater treatment systems.

Peracetic Acid (PAA)

Cons:

- 1. Corrosive Properties:** corrosive to certain metals and materials, including stainless steel, aluminum, and rubber. It can cause damage to equipment and surfaces if not used properly or concentrations are too high.
- 2. Safety Concerns:** a strong oxidizing agent and can cause skin and eye irritation, respiratory irritation, if not handled properly. Personal protective equipment (PPE) and proper ventilation are essential.
- 3. Strong Odor:** can be unpleasant for workers in the production environment. Adequate ventilation is necessary to minimize exposure and discomfort.
- 4. Stability and Shelf Life:** have limited stability and can degrade over time, especially when exposed to heat, light, or air. This can affect the effectiveness of the sanitizer and necessitate more frequent replenishment or replacement of stock solutions.
- 5. Regulatory Considerations:** specific guidelines and regulations may apply to its use in food processing facilities.

Chemical Sanitation

Pros:

- **Rapid Action:** Can rapidly kill a wide range of microorganisms, effective in a fast-paced production environment.
- **Cost-Effective:** in the short term and readily available, reducing the initial investment required.
- **Ease of Use:** These sanitizers are relatively easy to use and require minimal training.

Cons:

- **Residue and Allergen Concerns:** May leave residue on equipment or food surfaces, potentially affecting product quality or triggering allergen concerns or other health risks.
- **Environmental Impact:** Some may have adverse environmental effects if not handled and disposed of properly.
- **Resistance:** Prolonged use may lead to the development of microbial resistance, reducing their effectiveness over time.



Hot Water Sanitation

Involves using hot water at temperatures above 180°F to kill or deactivate microorganisms on surfaces.

Effective in reducing microbial populations, especially when combined with mechanical action such as scrubbing or agitation.

The effectiveness depends on factors such as temperature, contact time, and water quality.

Hot Water Sanitation

Pros:

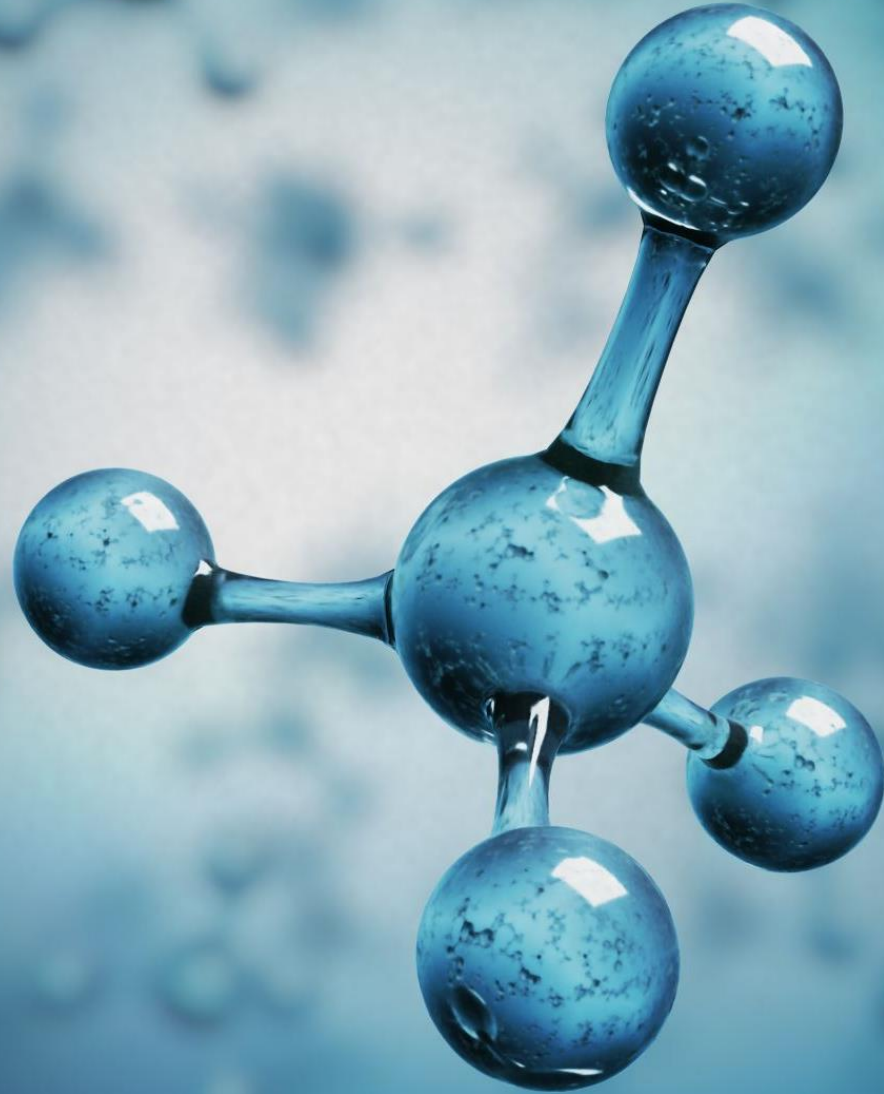
- **Effective Heat Treatment:** an excellent method for sanitizing equipment, surfaces, and utensils in meat processing due to its ability to kill a wide range of pathogens.
- **Energy-Efficient (sometimes):** often uses existing hot water systems in the facility.
- **Cost-Effective:** The cost of hot water can be lower than some chemical sanitizers, making it an economical choice.

Cons:

- **Limited Application:** may not be suitable for all meat processing areas, especially for water-sensitive equipment or when dealing with heat-sensitive products.
- **Time-Consuming:** Achieving the required temperatures and contact times with hot water can be time-consuming and may disrupt production schedules.
- **Can see biofilm build up over time**

Ozone Sanitation

Works by disrupting cellular structures and interfering with metabolic processes in microorganisms.



Ozone Sanitation

Pros:

- **Effective Disinfection:** a powerful oxidizing agent that can effectively eliminate a wide range of pathogens, including bacteria, viruses, molds, and yeasts
- **Minimal Residue:** breaks down into oxygen, leaving no chemical residue on the meat or processing equipment, ensuring the safety and quality of the final product.
- **Versatile Application:** can be used in various stages of meat processing, from surface sanitation to water disinfection
- **Environmentally Friendly:** reduces the reliance on traditional chemical sanitizers
- **No bacterial resistance** as far as we are aware at this time

Cons:

- **Equipment Costs:** The installation of ozone sanitation systems can be expensive, requiring an upfront investment.
- **Training:** Proper training is essential for the effective use, may increase operational costs and time.

What Do I Choose?

Depends on various factors:

- specific needs of the facility
- the type of products processed
- sustainability goals

Each type of application offers their own advantages and drawbacks. Careful consideration of these pros and cons, along with compliance of regulatory requirements, is essential for ensuring the safety and quality of meat products while maintaining an efficient and sustainable processing operation. Ultimately, the right choice may involve a combination of these methods.

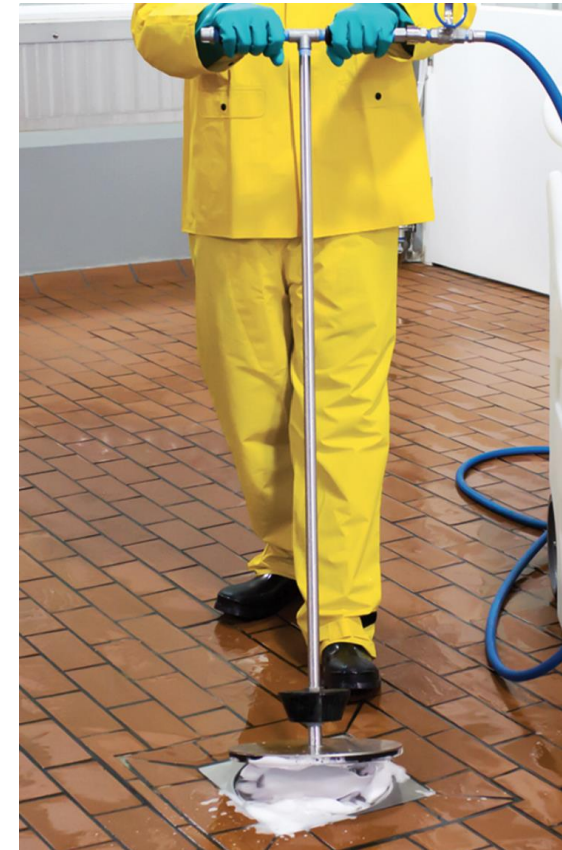
Other Sanitation Tools



Boot Scrubber



Degreaser



Drain Cleaning Tools



Other Sanitation Tools

DOORWAY FOAMING

Considerations for Best Practices

- Company provided boots
- Boot foamers
- Hand sinks close and available
- Outsourced pest control
- Abundance of supplies

Sanitation Mindset



Continuous
Improvement



Always Look Ahead



Build Strong Culture

If you never look for sanitation issues, then there will never be any issues!!