

Commercial Cleaning Products & Technologies: Comparative Summary

Technology or Product	How the technology or product works.	Common Usage	FDA GRAS Food Safety	On-site test	Listeria 4 log kill	Flu Virus 4 log Kill	EPA Approved
Ionized Bubbles	Water flows through a cell that applies a slight electrical charge. An ion exchange membrane creates positively and negatively charged nano-bubble cleaning agents.	Glass, stainless steel & other smooth surfaces. Also carpets.	No	No	No	No	Yes
Electolyzed Water	Salt water with low-voltage electricity creates two cleaning agents. Sodium ions are converted into sodium hydroxide, an alkaline liquid that cleans and degreases. Chloride ions become hypochlorous acid, also known as acid water.	Smooth floors & large smooth surface areas	N/A	No	Yes	Yes	Yes
Steam Cleaning	Water is heated to the point and turns into vapor. The vapor is forced out through a nozzle which can be directed at the surface to be cleaned. As the vapor cools and turns back into water, it pulls out dirt and grime.	Smooth floors, carpets & upholstery.	N/A	No	No	No	Yes
Chemical Cleaners	Traditional man-made chemicals work well as cleaning agents. Many leave residues and odors, and may be harmful if not used properly.	All types of surfaces. Varies by type	Some	Yes	Yes	Yes	No
Green Cleaners	Most green cleaners are made using plant-based derivatives and essential oils. May sacrifice a degree of cleaning power for green compliance	All types of surfaces. Varies by type	Yes	No	No	No	Yes
Liquefied Ozone	Tap water is saturated with ozone which wipe out pathogens and contaminants through oxidization. Reverts to water and oxygen.	All types of surfaces, including food prep & service surfaces.	Yes	Yes	Yes	Yes	Yes

Ref: International Ozone Association - AOAC Official method 961.02; Germicidal Spray Products as Disinfectants; and Detergent Sanitizing Action of Disinfectants. FDA GRAS Notification. EPA Organic Program compliance. Data compiled in 2009 from third party independent industry and academic sources.

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