



BACKED BY SCIENCE

A UVC device is effective if well engineered and used properly.

UV sterilization effective for viruses and bacteria? The short answer is yes, and even more organisms. Studies have shown that UVC at 254 nm is effective against all foodborne pathogens, natural microbiota, molds, and yeasts. Because microorganisms come with different sizes and shapes that affect their UV absorption, the required time for killing each species varies.

How does UV sterilize something? I'm glad you asked! UV sterilization also known as UV disinfection or ultraviolet germicidal irradiation (UVGI) works by breaking down certain chemical bonds and scrambling the structure of DNA, RNA and proteins, causing a microorganism to be unable to multiply. When a microorganism is unable to multiply, it is considered dead since it cannot reproduce within a host and is no longer infectious.

"Dead." That sounds perfect. How much time does it take to get this nasty stuff to said "dead" status? Let's talk destruction specifics. Since UV sterilization uses the energy of UVC to destroy biomolecules, its effectiveness depends on the total energy applied which is affected by the length of exposure time and the distance from the light source. For example, if you use a UV lamp held within 1 inch above a petri dish grown with E. coli, it will only take 1-2 min to show a complete sterilization.¹ For sterilizing surgical instruments in a medium UV box, it might take 5-10 min. For sterilizing an 8-foot biosafety cabinet in a lab, a common recommendation is 30 min.

SOURCE

<https://abionline.com/is-uv-sterilization-effective-for-viruses-and-bacteria/>