

Packing Microwave Sterilization machine



Microwave refers to electromagnetic waves with frequencies ranging from 300MHz to 300 KMHz. Under the action of microwave electromagnetic field, polar molecules in the medium change from thermal motion to alignment with the alternation of microwave electromagnetic field. For example, when the microwave frequency is 2450MH, 245×10^9 times/s will occur, resulting in intense friction and heat generation. Therefore, in this microscopic process, microwave energy is transformed into heat energy in the medium, which makes the temperature of the medium increase macroscopically.



Microwave has both thermal and non-thermal bactericidal effects . The mechanism of microwave thermal sterilization is summarized as follows: biological cells are a condensate medium composed of complex compounds such as water, protein, nucleic acid, carbohydrate, fat and organic matter. Under the action of strong microwave field, the temperature of the medium rises, the spatial structure of the medium changes or destroys, and the protein denatures, affecting its solubility, viscosity, expansibility and stability, thereby losing its stability. De-bioactivity. The mechanism of microwave non-thermal sterilization is summarized as follows: microwave can change the state of biological alignment and aggregation and its movement law, and the ion flow induced by microwave field will affect the charge distribution near the cell membrane, resulting in damage to the barrier function of the membrane, affecting the function of Na- K pump, and producing membrane dysfunction, thereby interfering with or destroying the normal metabolism function of the cell, leading to fine cells. The growth of bacteria is inhibited, stopped or died, and then the relaxation, breakage or recombination of hydrogen bonds can be induced by the action of microwave field by RNA and DNA in cells, which can induce gene mutation or chromosome aberration, thus affecting the changes of biological activity, delaying or interrupting the stable inheritance and proliferation of cells.



Microwave sterilization is a very wide range of sterilization methods. It can be used in many food systems, such as powder, paste, liquid and solid materials. This is beyond the reach of many other sterilization methods. At present, [packing microwave sterilization machine](#) in meat products and other food processing applications, can shorten the sterilization time, conducive to continuous production, but the equipment occupies less space, easy operation, less damage to product quality, is a sterilization process worthy of vigorous development.

Compared with the traditional high-temperature sterilization, [microwave sterilization machine](#) has the advantages of fast speed and keeping the nutrient composition of food. But if the operation method is not proper, sometimes the result of microwave sterilization is inferior to that of high-temperature sterilization. However, from the long-term practice, the effect of microwave sterilization is still very good, so we should continue to strengthen the laboratory research and

industrialization process of microwave sterilization technology.