



## Industrial Microwave Equipment introduction(1)

### Industrial Microwave Equipment:

Using microwave properties characteristic used industrially, and made of the equipment used in the production line, this device is the industrial microwave equipment.

#### 一、 What is the microwave

Microwave refers to 300MHz-300GHz frequency electromagnetic waves, radio waves in a limited frequency band referred to, that the wavelength of 1 meter (excluding 1 meter) to 1 mm between the electromagnetic wave is decimeter, centimeter wave, millimeter wave collectively. Microwave frequencies than the average high frequency radio waves, usually referred to as "ultra-high frequency electromagnetic waves." As an electromagnetic microwave also has wave-particle duality. Microwave quantum energy for the  $1.99 \times 10^{-25} \sim 1.99 \times 10^{-22} \text{J}$ .

#### 二、 What are the main use of the microwave properties

##### 1、 Microwave heating

Microwave frequency radio wave is 300 MHz to 300 GHz, the heating medium is water molecules in the material is a polar molecule. It is in the fast-changing high-frequency electromagnetic fields, extreme sexual orientation will change with changes in the external electric field. Sports show cause friction between the effector molecule, in which case the field of the microwave field energy into heat within the media, so that the material temperature increases, heat is generated and expanded series of physical and chemical processes to achieve the microwave heating and drying purposes.

##### 2、 Microwave sterilization

Microwave sterilization is the use of the results of the combined effect of thermal effects and biological effects of electromagnetic fields. Microwave thermal effects on bacteria is to make changes in the protein, bacteria lose nutrition, reproduction and survival conditions and death. Biological effects of microwaves on bacteria microwave electric field is changing the membrane potential distribution section, the impact of electron and ion concentration around the cell membrane, thus changing the permeability of the cell membrane, bacteria and therefore malnutrition, not the normal metabolism, cell structure and function disorders, growth was inhibited and death. In addition, the microwave can make normal bacterial growth and stability of the genetic breeding of nucleic acid [RNA] and deoxyribonucleic acid [DNA], is composed of several hydrogen relaxation, breakage and recombination, and induce genetic mutations or chromosomal aberrations and even rupture.