

Testing the Effectiveness of an Autoclave or Sterilizer

Commercial test vials, available from most scientific suppliers, are designed to test the efficacy of an autoclave or sterilizer. They contain spores of *Bacillus stearothermophilus*, a thermophilic bacterium that grows best at 55° C. The sealed test vial also contains a growth medium and a pH indicator. The sealed vial is placed with the supplies in the autoclave during the sterilization. After sterilization, the vial is incubated at 55° C for up to 3 days. If the sterilization was effective, there will be no growth in the vial since the spores were killed. If the sterilization was ineffective, the heat from the autoclave will stimulate the spores to germinate into vegetative cells that will grow, producing acid that will change the color of the pH indicator. The vial can even be suspended in a flask of growth medium in the autoclave to determine whether the heat actually penetrated to the center of the medium. Since spores survive for many years the vials can be stored for a long time, but should be tested if they are old.

Contributed by

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