

## **ISO 22196:2011(E) Measurement of antibacterial activity on plastics and other non-porous surfaces**

This International Standard specifies a method of evaluating the antibacterial activity of antibacterial-treated plastics and other non-porous surfaces, such as coating materials, ceramics, natural and artificial leather, stainless steel, rubber, etc. Building materials, photocatalytic materials and antibacterial-treated textile products are excluded, even if the surfaces are coated or laminated.

Bacteria that are used in the test are *Staphylococcus aureus* and *Escherichia coli*.

Flat specimens of treated antibacterial (3) and untreated control (6) material are tested. Test inoculum is prepared by suspending the test bacteria from slant medium and diluting to reach the target concentration.

The test specimens are placed to separate sterile Petri dishes. Test inoculum is pipetted on the test specimens and covered with film. After inoculation the treated test specimens and half of the untreated test specimens are incubated in Petri dishes at 35 °C and relative humidity of  $\geq 90\%$  for 24 h.

Half of the untreated test specimens are not incubated but are processed immediately. 10 ml of neutralizer broth is added to the Petri dishes and the specimens are washed by pipetting. The number of viable bacteria is determined from the washing solution using serial dilution and standard plate count method.

The same procedure to count viable bacteria is applied to the treated and untreated test specimens after the incubation.

The number of viable bacteria recovered per  $\text{cm}^2$  per test specimen is calculated. The antibacterial activity is calculated based on these results.