

Two layers of the mask were evaluated (Layer 1 and Layer 4)

The layers have antiseptic properties because they are also consisted of 0,3% Cetylpyridinium Chloride (CPC)

0,1 ml of an 8 hours broth culture (Tryptone Soya Broth) of the different microorganism species tested *Staphylococcus cohnii* ATCC 35662, *Staphylococcus aureus* ATCC 6538, *Streptococcus pyogenes* ATCC 19615, *Enterococcus hirae* ATCC 10541, *Pseudomonas fluorescens* ATCC 49838, *Escherichia coli* ATCC 4157, *Salmonella enteritidis* ATCC 13076, *Serratia marcescens* ATCC 8100, *Proteus mirabilis* ATCC 7002, *Bacillus subtilis* spores ATCC 6633, *Bacillus clausii* spores Sonafi-Syntelabo Oto S.p.a.- Milan, *Bacillus stearothermophilus* spores ATCC 10149, were spread on the surface of Tryptone Soya Agar Petri plate surface using glass spreaders. A fragment of 1cm² of layers 1 and 4 was put subsequently on the agar inoculated surface and plates were incubated for 24 hours at 36 ± 1 °C for all the micro organisms tested except for the *Bacillus stearothermophilus* that had to be cultured under the temperature of 56 ± 1 °C . The halo of growth inhibition was then evaluated.

RESULTS

The halos of inhibition growth for the tested microorganisms are shown in Table 1.

At the concentration of 0,3% ,Cetylpyridinium chloride (which is present in layers 1 and 4) demonstrates a high effectiveness against the growth of *Bacillus* tested species, *B. stearothermophilus* and *B. clausii* and of *Enterococcus hirae*, demonstrates a good inhibition against the growth of *B. subtilis*, *Staphylococcus cohnii*, *Staphylococcus aureus*, *Streptococcus pyogenes* and results to have moderate effectiveness against the growth of *Proteus mirabilis*.

On the contrary Cetylpyridinium chloride at the concentrations present, doesn't seem to have any effects on the growth of *Escherichia coli*, *Salmonella enteritidis*, *Serratia marcescens* and *Pseudomonas fluorescens*.

TABLE 1 Halos of growth inhibition produced by the CPC layers (1 &4)

Type of microorganism	Layer 1	Layer 4
<i>Escherichia coli</i>	0mm	0mm
<i>Salmonella enteritidis</i>	0mm	0mm
<i>Serratia marcescens</i>	0mm	0mm
<i>Proteus mirabilis</i>	1mm	1mm
<i>Pseudomonas fluorescens</i>	0mm	0mm
<i>Staphylococcus cohnii</i>	2mm	2mm
<i>Staphylococcus aureus</i>	3mm	2,9mm
<i>Streptococcus pyogenes</i>	2mm	2mm
<i>Enterococcus hirae</i>	10mm	11mm
<i>Bacillus subtilis</i>	2mm	2mm
<i>Bacillus clausii</i>	8mm	8mm
<i>Bacillus stearothermophilus</i>	8mm	9mm