

## Nano4health - PSZ12 & PPZ12

---

**Nano4health** is a family of antibacterial thermoplastic compounds. The antibacterial activity is achieved by adding different nanoparticles. **Nano4health – PSZ12 and PPZ12** are antibacterial thermoplastic compound based on polystyrene and polypropylene respectively. In addition to antibacterial activity **PSZ12 and PPZ12** have very good mechanical properties and are easy to use in injection molding

### Antibacterial evaluation

**Standard** : JIS Z2801, ISO 12296

**Bacteria**: E. Coli ATCC 8739

Contact time: 24h

Temperature°: 37°C

### Results:

**Counting of living bacteria on each sample – three specimens of reference and three specimens of each “unknown” samples. The result is transformed on logarithm  $\log_{10}$  of the value of the counting**

<b>E. Coli ATCC 8739</b>	Log <sub>10</sub> bacterial population	% of reduction
<b>PS based materials</b>		
Virgin PS - reference	6.8 ± 0.2	NA
<b>PSZ12</b>	0 no living bacteria	100
<b>PP based materials</b>		
Virgin PP - reference	7.2 ± 0.1	NA
<b>PPZ12</b>	0 no living bacteria	100

### Conclusions

- the references have not antibacterial activity
- **PSZ12 and PPZ12** have antibacterial activity estimated to closed to 100% efficiency

Due to the very low amount of nanoparticles, the thermal and mechanical properties (evaluation in progress) of the virgin polymer are almost not affected.

## **Possible applications:**

**Mobile:** keyboard, Socket mobile, remote control

**Home:** cutting board, door clenched, toilet, air conditioning unit

**Kids :** pens, toys, baby buggy, schoolbag...

**Cleaning:** brushes, vacuum, broom

**Public places:** caddy supermarket shopper, hanging straps, cash points, coated parts in trains, aircrafts, casinos...

## **Food and entertainment:**