

## Guard Health with StaClean™ Technology

StaClean™ technology fuses silver-based antimicrobial agent into the filaments. Silver is released from the filaments during usage due to surface moisture and inhibits growth of micro-organisms on the filaments. An antimicrobial efficacy >99% is demonstrated by third party lab according to ASTM E2149.

StaClean™ technology outperforms traditional coating-antimicrobial-agent-on-surface technology in terms of long-lasting antimicrobial efficacy. Internal tests proved that StaClean™ filaments could still effectively inhibit growth of *E. Coli* and *S. Aureus* after simulated brushing equivalent to three months.

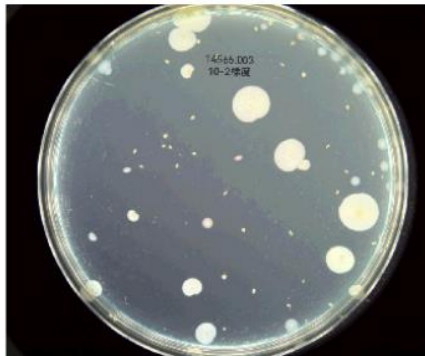
Both Tynex® and Kulex® filaments have products empowered by StaClean™ technology.

- Tynex® 2900HA
- Tynex® 2901HA
- Tynex® 2904HA
- Tynex® RS 2902HA
- Kulex® 6200HA
- Kulex® 6260HA

Filaments of StaClean™ technology have been used for toothbrush bristles and cosmetics to guard the health of consumers.

A demo experiment clearly shows the antimicrobial effects of Tynex® 2900HA filaments when they are used for toothbrush bristles. *E. Coli* was inoculated into the bristles of toothbrush which was either tufted with Tynex® 2900HA filaments (StaClean™ technology product) or Tynex® 0900HA filaments (Classic product). The toothbrushes were kept in humid environment with a humidity >85%RH at 25°C for 24 hours before the bacteria were released from the toothbrush bristles and counted. It turned out that the number of bacteria increased by 35 times for toothbrush bristles made of Tynex® 0900HA filaments, while it remained at the same level for toothbrush bristles made of Tynex® 2900HA filaments.

**Tynex® StaClean™ Filaments**



**Tynex® Classic Filaments**

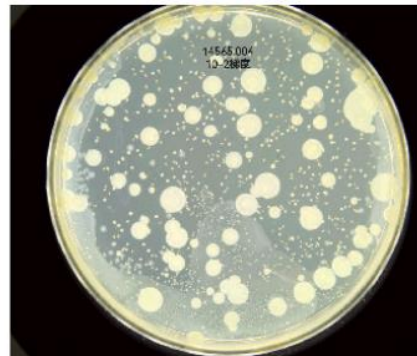


Figure 1 Toothbrush made of Tynex® StaClean™ filaments (upper left) and toothbrush made of Tynex® Classic filaments (upper right), Petri dishes of bacterial colony counting of bacterial solution released from bristles of Tynex® StaClean™ filaments (lower left) and that released from bristles of Tynex® Classic filaments (lower right)