

Supplementary Information

Effects of Sterilization Cycles on PEEK for Medical Device Application

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1. Calculation for number of compression cycles for 1 year (52 weeks) of usage:

Usage of clip component per week: 2 times

Total usage over 1 year: $52 \times 2 = 104$ times

Actual pressing of spring per usage: 2 times

Possible pressing of spring outside actual usage: 10 times

Total possible pressing of spring: $104 \times 12 = 1248$

Safety factor: 5

Design cycles: $1248 \times 5 = 6240$ times

Declared cycles: 6600 times

2. Compression cycles after each set of sterilization cycles:

After each sterilization cycle, component usage: 5 times

Safety factor: 5

Total uses in 10 sterilization cycles: $10 \times 5 \times 5 = 250$ times