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[\[PDF \(1809K\)\]](#) [\[References\]](#)**Dynamic viscoelastic properties of experimental silicone soft lining materials**

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Abstract:

The purpose of this study was to evaluate the dynamic viscoelastic properties of experimental silicone soft lining materials, Silastic[®] MDX 4-4210 reinforced with silica fillers. Storage modulus (E'), loss modulus (E'') and damping factor ($\tan \delta$) were determined using a dynamic mechanical analyzer under a deformation strain level of 0.27% at test frequency and a temperature range of 1 Hz and 0 to 60°C, respectively. The degree of silica dispersion was also studied using a field emission scanning electron microscopy (FE-SEM). One-way ANOVA and Tukey's HSD test results indicated that the prepared silicone elastomers provided a significantly greater damping factor, but less storage modulus than GC Reline Soft and Tokuyama Sofreliner Tough ($p < 0.001$). The storage moduli, loss moduli and damping factor of the experimental silicone elastomers increased with increasing amounts of fumed silica. In conclusion, the experimental silicone elastomers revealed acceptable dynamic viscoelastic properties to be used as denture soft lining materials.

Key words:

[Dynamic viscoelastic properties](#), [Silicone elastomer](#), [Soft lining material](#)

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