## Cosolvent-free synthesis and characterization of poly(methylsilsesquioxane-codimethylsiloxane) liquids and deep-ultraviolet transparent elastic resins

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## Abstract

Liquids of poly(methylsilsesquioxane-co-dimethyl-siloxane), called "DT-type methyl silicone", with a high methylsilsesquioxane unit mole fraction of 80% (methyl/Si ratio of 1.2) were obtained by a cosolvent-free hydrolytic polycondensation of mixtures of methyltrimethoxysilane and dimethylsiloxane at high water to alkoxysilane ratios (10). The thermal curing of the liquids yielded dense, stiff, and tough resins that exhibited excellent deep-ultraviolet transparency and complete elastic recovery.

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