

**ALKYL-ALKOXY-SILACYCLIC COMPOUNDS AND METHODS FOR DEPOSITING FILMS
USING SAME**

ABSTRACT OF THE DISCLOSURE

5 A method and composition for producing a porous low k dielectric film via chemical
vapor deposition is provided. In one aspect, the method comprises the steps of: providing a
substrate within a reaction chamber; introducing into the reaction chamber gaseous reagents
including at least one structure-forming precursor comprising an alkyl-alkoxysilacyclic
compound, and a porogen; applying energy to the gaseous reagents in the reaction chamber
to induce reaction of the gaseous reagents to deposit a preliminary film on the substrate,
10 wherein the preliminary film contains the porogen, and the preliminary film is deposited; and
removing from the preliminary film at least a portion of the porogen contained therein and
provide the film with pores and a dielectric constant of 2.7 or less. In certain embodiments,
the structure-forming precursor further comprises a hardening additive.

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Fig. 1