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NASA TECH BRIEF

Marshall Space Flight Center



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Coatings from Copolymers of Tetraphenoxysilane and p,p¹-Biphenol

Heat-resistant coatings have been prepared by melt-condensing tetraphenoxysilane with p,p¹-biphenol. The resultant resin is highly crosslinked and completely aromatic. The procedure used includes developing the polyaryloxysilane structure "in situ" after the substrate has first been coated with a pre-polymer.

The subject resins are potentially useful as protective coatings for metals, ceramics, glass, and other materials that can accommodate relatively high curing temperatures. In their partially polymerized forms, they could also be useful as modifier resins, such as phenolics, which are used in laminating and molding applications where high temperatures and pressures are involved.

A series of three-dimensional polyaryloxysilane structures has been prepared by crosslinking low molecular weight phenolic OH-terminated polymers with tetra- or tri-phenoxysilanes. Several of these cured polymers exhibited good coating properties but underwent moderate material losses with prolonged exposure in air at 523.15 K (250° C).

Note:

The following documentation may be obtained from:

National Technical Information Service
Springfield, Virginia 22151
Single document price \$6.00
(or microfiche \$0.95)

Reference:

NASA-CR-85820 (N67-31379), Process Development and Pilot-Plant Production of Silane Polymers of Diols

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to:

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