

“METHOD FOR PRODUCING VISCOUS LIQUID ADMIXTURES OF FUMED SILICA AND SILOXANE” VCU #13-056

Applications

- Method for producing admixtures of **untreated** fumed silica and siloxane diols
- Method can be used for producing silicone rubber which can be applied to a number of fields such as:
 - Automotive
 - Aerospace
 - Cooking
 - Medical devices
 - Home repair

Advantages

- Decreases the cost of production
- Maintains similar mechanical properties as compared to the current process of incorporating expensive treated fumed silica

Inventors

[Kenneth J. Wynne, Ph.D.](#)
Wayne Brooke-Devlin

Contact

Wendy M. Reid, Ph.D.
Licensing Associate
wmreid@vcu.edu
Direct 804-827-2213

Market Need

Silicones are used in many demanding applications including those in construction, aerospace, automotive, energy, and medical sectors. In order to increase mechanical strength, fumed silica filler is often used before crosslinking. Current methods require long mixing and high shear to achieve even dispersion and distribution of fumed silica. To address this problem, a relatively expensive surface treatment of fumed silica is used to reduce surface silanols and facilitate filler – resin dispersion.

Technology Summary

This is a new method for the preparation of viscous liquid admixtures of **untreated** fumed silica that is evenly distributed in silicone diols without extensive mixing or chemical pre-treatment of fumed silica. Since this method does not require an extra step to treat fumed silica with chemicals, the cost of production is significantly decreased in comparison to conventional technology. This new method produces silicone elastomers with similar mechanical properties. Therefore, this method serves two purposes to both decrease cost of production and maintain structural/mechanical integrity.

Technology Status

Material produced from this method has been tested extensively.

Patent Pending: U.S. and Foreign rights available.

This technology is available for licensing to industry for further development and commercialization.