

Synthesis of Micro Silicone Resin by Sol-Gel Process

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Siloxane bond of silicon has a very stable structure that is more stable than the C-C binding of ordinary organic polymers. Therefore, it has excellent heat resistance and electrical insulation but still has the organic chemical properties. Due to these characteristics, silicon is used in all industries, such as lubricants, grease, paints, decompression adhesives, and cosmetics additives.

In this study, we manufactured spherical microsilicone resin particles by Sol-Gel method and analyzed their properties. As factors that affect particle size of silicone resin, pH, concentration of precursors, reaction temperature, and stirring speed were considered. It was possible to manufacture spherical silicon resins with uniform particle size by varying the pH of the reactants. When the concentration of precursors was 15 wt% or higher, particles of less than 1 μm or larger than 3 μm were not formed. Particles of less than 1 μm were formed when the concentration of precursor was as low as 5 wt%.