



## Effects of Hydrocarbon-Based Grease on Rapid Prototype Material Used for Grease Retention Shrouds

By -

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 34 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. Effects of hydrocarbon-based greases on specific rapid prototype (RP) materials used to fabricate grease retention shrouds (GRS) were explored in this study. Grease retention shrouds are being considered as a way to maintain adequate grease lubrication at the gear mesh in a prototype research transmission system. Due to their design and manufacturing flexibility, rapid prototype materials were chosen for the grease retention shrouds. In order to gain a better understanding of the short and long term effects grease pose on RP materials, research was conducted on the interaction of hydrocarbon-based grease with RP materials. The materials used in this study were durable polyamide (nylon), acrylonitrile butadiene styrene (ABS), and WaterClear 10120. Testing was conducted using Mobilgrease 28 and Syn-Tech 3913G grease (gear coupling grease). These greases were selected due to their regular use with mechanical components. To investigate the effect that grease has on RP materials, the following methods were used to obtain qualitative and quantitative data: Fourier transform infrared spectroscopy (FT-IR), interference profilometer measurements, digital camera imaging, physical shape measurement, and visual observations. To record the changes in the RP...



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