

Army Experience with Silicone Brake Fluids

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Author(s): James H. Conley Robert G. Jamison

Affiliated: U.S. Army Mobility Equipment R&D Center

Abstract: A program to evaluate silicone brake fluids for use in military vehicles operating in various climatic conditions was begun in 1967. After 6 years of laboratory testing and numerous improvements in the characteristics of these fluids, a vehicle field test was initiated in the spring of 1973. Three candidate silicone fluids were selected and installed in M151 1/4-ton cargo vehicles, and M-715 1-1/4-ton vehicles operating at the Tropical Test Center (TTC), Panama Canal Zone, the Yuma Proving Ground (YPG), Arizona, and the Arctic Test Center (ATC), Fort Greeley, Alaska. Brake parts were inspected after 1 year of operation, and all parts were removed and inspected after 2 years of operation. After 2 years of service at TTC and YPG, the two water intolerant silicone fluids were significantly better than the water tolerant silicone fluid and the conventional VV-B-680 fluid. At ATC, the water intolerant silicone fluids were removed from test after 8 months due to possible crystallization at temperatures below -50°F, and two new silicones were installed. The new low temperature silicones were superior to the MIL-H-13910 arctic brake fluid after 1 year of service.

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