

EFFECT OF VARIOUS FIBERS ON TRIBOLOGICAL PROPERTIES OF POLYTETRAFLUOROETHYLENE (PTFE) COMPOSITES IN DRY CONDITIONS

Y. R. KHARDE AND K. V. SAISRINADH

Abstract

There is an increase in demand for polymeric composite materials for high performance, in many industrial and aerospace applications. Short fiber reinforced polymer composites are now a days used in numerous tribological applications. In spite of this fact, new developments are still under way to explore other fields of application for these materials and to tailor their properties for more extreme loading conditions. In this paper an attempt has been made to investigate the tribological property of these materials at low loads and low velocities. Four number of polymer composites have been investigated for their tribological properties by using Tribometer (TR-20) following ASTM G99 standards. The load range selected for the testing is 10-40 N and velocity range selected is 0.5m/s - 2.0 m/s. All the tests are performed at NTP and in dry conditions. The counter surface of EN8 material with average surface finish of 0.56 μ m is used. All the results are tabulated and conclusions are drawn. It has been found that the specific wear rate decreases with increase in load. Adding glass fibers, bronze fibers to PTFE were found effective in reducing the wear rate of the PTFE composites.

Key Words: PMC's, Coeff., Friction, wear, Glass fiber, Bronze fiber, Spec. wear rate.