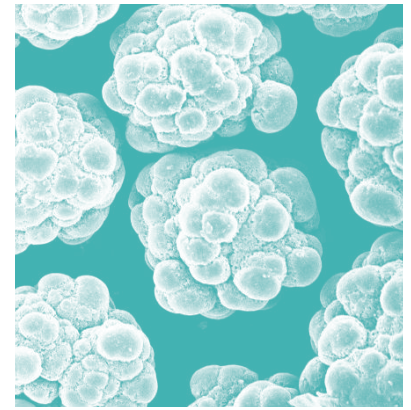


# Ekonol® Case Study #3:



## Effect of Temperature on Wear Properties of Ekonol®

The effect of temperature on wear rate for Ekonol® compositions is shown in the table to the right. The data indicates Ekonol® is contributing resistance to wear at higher temperatures to the PTFE. The data at 500° F, 550° F and 600° F (260° C, 288° C and 316° C) are equivalent and generally represent the scatter obtained with data. It should be noted that at 600° F (316° C), an increase in weight loss was experienced, indicating that this temperature is approaching the upper limit of the composition.

A comparison of wear rates of a 25% Ekonol® in PTFE versus the three other PTFE composites is shown in the table to the right. At room temperature, the Ekonol® composition provides the best wear resistance, being comparable to or slightly better than 60% bronze filled PTFE and is 2-3 times better than carbon/graphite and glass filled PTFE. At elevated temperatures, the 25% Ekonol® composition is comparable with the bronze filled and carbon/graphite filled materials, and much better than the glass filled.

### EFFECT OF TEMPERATURE ON WEAR RATE FOR EKONOL® COMPOSITIONS

	25% Ekonol® in PTFE	100% Ekonol®
Wear* at R.T.	0.0007" (0.018 mm)	0.0009" (0.038 mm)
300° F (149° C)	0.0013" (0.033 mm)	0.0014" (0.036 mm)
500° F (260° C)	0.0023" (0.058 mm)	0.0031" (0.079 mm)
550° F (288° C)	0.0019" (0.048 mm)	0.0029" (0.074 mm)
600° F (316° C)	0.0017" (0.043 mm)	0.0034" (0.086 mm)

\* Wear for 2 hrs test at 110 psi (7.6 MPa), 90 fpm (27.4 m.min) on an LFW-1

### EFFECT OF TEMPERATURE ON WEAR RATE FOR VARIOUS PTPE COMPOSITIONS

	25% Ekonol®/ PTFE	25 % Carbon/ Graphite in PTFE	25% Glass in PTFE	60% Bronze in PTFE
Wear* at R.T.	0.0007" (0.018 mm)	0.0017" (0.043 mm)	0.0022" (0.056 mm)	0.0011" (0.028 mm)
300° F (149° C)	0.0013" (0.033 mm)	0.0014" (0.036 mm)	0.0026" (0.066 mm)	0.0014" (0.036 mm)
500° F (260° C)	0.0023" (0.058 mm)	0.0020" (0.051 mm)	0.0041" (0.104 mm)	0.0022" (0.056 mm)

\* Total wear for 2 hrs test at 110 psi (7.6 MPa), 90 fpm (27.4 m/min) on an LFW-1

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