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Abrasion & Frictional Properties

PPS has a high melting point and a superior heat resistance, it becomes excellent self-lubricant materials filled with such as carbon fiber and PTFE. Comparing with PA and POM, the self-lubricant PPS grades have excellent limiting PV (Pressure Velocity) value than these materials.

Sliding friction property may varies depend on materials, dimension, friction condition and condition of heat radiation from parts. The following is data of abrasion & frictional properties.

1. Co-efficient of friction

Co-efficient of friction of FZL-4033 which is glass fiber and PTFE filled has comparatively excellent. Carbon reinforced grades are better frictional property. Generally, concerning to relation between co-efficient of friction and PV value, while pressure (P) is higher, co-efficient of friction becomes lower. If pressure (P) is stable, there is no co-relation to velocity (V).

2. Abrasion and/or wear

Carbon fiber filled type shows good abrasion property and especially, pitch-based carbon fiber filled grades have better wear resistance than PAN carbon fiber filled grades. Especially, Addition of PTFE enhances wear resistance.

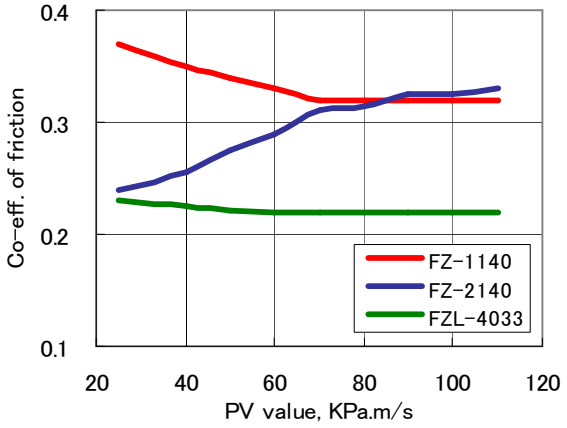

Fig.1 Co-eff. Of friction vs. pressure.
(GF filled grades)

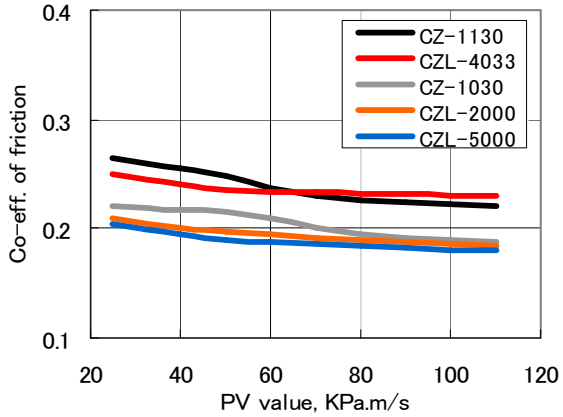

Fig.2 Co-eff. Of friction vs. pressure.
(CF filled grades)

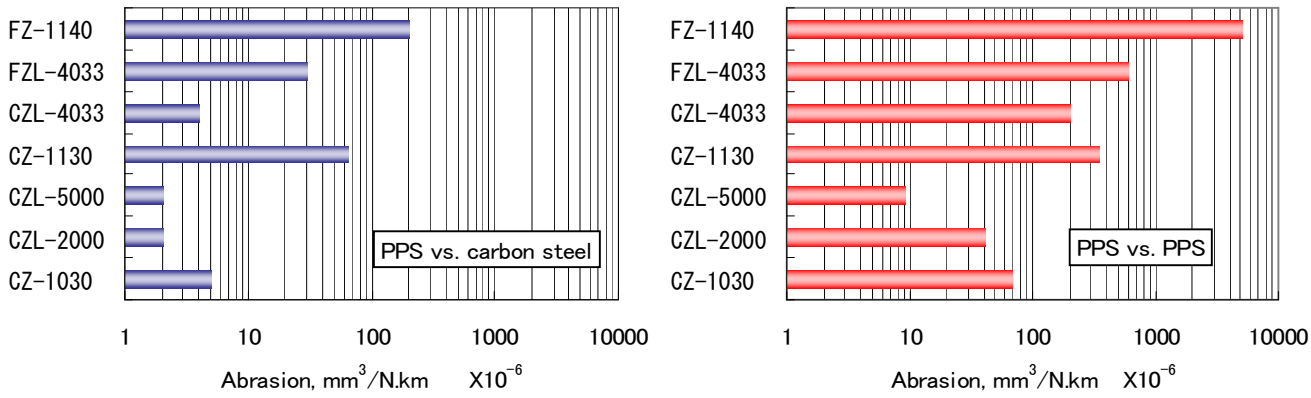

Fig.3 Abrasion properties of PPS vs. carbon steel and PPS vs. PPS
(Velocity: V=0.3m/sec., Pressure: P=0.15N/mm)