Technical Literature D-01

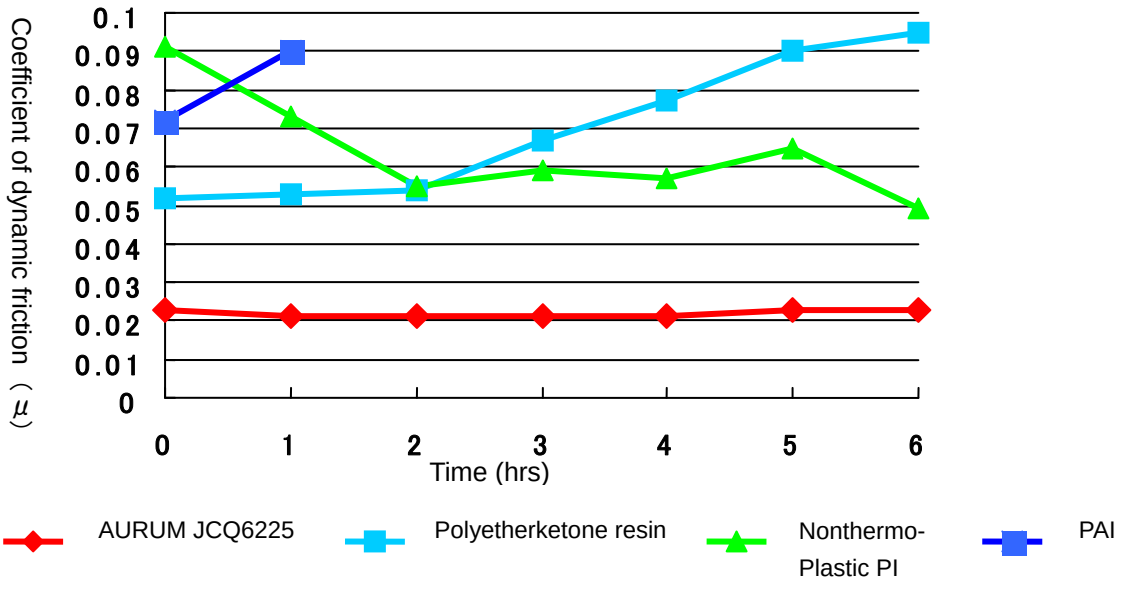
Wear/friction Properties of AURUM®

AURUM® has excellent wear/friction properties inherent in a polyimide resin. Its wear/friction properties are equal to or better than those of representative high-performance engineering plastics PEEK and VESPEL. Because of these properties as well as excellent heat resistance and mechanical properties, AURUM® can be applied to special moving parts (such as bearings, seals, etc.) which are used under non-lubricated conditions in a broad range of temperature and pressure.

Fig. 1 shows changes with time in the coefficient of dynamic friction of resins in high-speed wear/friction use under oil-lubricated conditions.
AURUM® has stable and satisfactory wear/friction properties, but its wear/friction properties can be improved by modifying it with a variety of auxiliary wear/friction agents (such as fluorocarbon resin, graphite, MoS2, etc.).

Table 1 shows the general physical properties and wear/friction properties of representative wear/friction AURUM® grades.

Fig. 1 Changes with Time in Coefficient of Dynamic Friction



Sliding conditions: ATF oil, counterpart material: A5052, P=15kg/cm2、V=250m/min

The information contained herein is based on the information and data available at this moment, but none of the data or evaluation results contained herein provide any warranty whatsoever.

Table 1 General Properties and Wear/friction Properties of Wear/friction Grades

	Item	Unit	JCL3030	JCF3030
	Characteristics of the grade		High strength, excellent performance under high PV, non-lubricated, and lubricated conditions	Intermediate strength, excellent performance under lubricated conditions
	Critical PV, lubrication against SUS	MPa・m/min	735	735
	Critical PV, lubrication against SUS	MPa・m/min	196	118
Wear/friction properties	Coefficient of friction		0.07 1)	0.11 2)
	Specific wear	$10^{-10}cm^3/kgfm$	100 1)	50 2)
General physical properties	Specific gravity		1.42	1.44
	Molding shrinkage	%	0.00/0.66	0.00/0.70
	Tensile strength	MPa	228	170
	Elongation	%	2	5
	Flexural strength	MPa	313	229
	Flexural modulus	MPa	17100	10790
	Izod impact strength	J/m	108	108
	Deflection temperature under load	ºC	248	246
	Coefficient of linear expansion	10^{-5}/ºC	0.6/4.7	0.6/5.2

* The above figures are just representative values, but not specification values.
1) Wear/friction conditions: P = 50 kg/cm2, V = 30 m/min
2) Wear/friction conditions: P = 50 kg/cm2, V = 25 m/min