

# CZL-2000

- **Out line: CZL-2000 is a pitch based carbon fiber and poly tetra fluoro ethylene filled PPS compound that is excellent self lubricant performance: low wear, and low friction properties.**
- **Color: Natural (Black)**

## Engineering Properties of CZL-2000

Properties	Test Method	Unit	CZL-2000
General Information			Pitch-CF & PTFE Lubricant
	<ASTM>		
<b>Physical</b>			
Specific gravity	D-792	-	1.52
Water absorption, 23deg. /24Hrs. /in water	D-570	Wt. %	0.07
Mold shrinkage, MD /TD <sup>a</sup>	D-955	%	0.25
<b>Mechanical</b>			
Tensile strength	D-638	MPa	100
Tensile modulus	D-638	MPa	8500
Tensile elongation at break	D-638	%	0.8
Poisson's ratio	-	-	0.36
Flexural strength	D-790	MPa	110
Flexural modulus	D-790	MPa	8000
Flexural elongation at break	D-790	%	1.2
Izod impact strength notched / un notched	D-256	J/m	45/200
Compressive strength	D-695	MPa	120
Rockwell hardness, R/M	D-785	-	118/98
Coefficient of friction <sup>b</sup> , static /dynamic	-	-	0.21/0.21
<b>Thermal</b>			
Distortion temp. of under load, 1.82MPa	D-648	°C	265
Coefficient of thermal expansion <sup>c</sup> , -30 to 90°C	D-696	m/mK	2.1x10 <sup>-5</sup>
UL Flammability <sup>d</sup> , t~0.8mm	UL-94	-	V-0 <sup>e</sup>
<b>Electrical</b>			
Dielectric strength, t=1.6mm	D-149	kv/mm	-
Dielectric constant, 1MHz	D-150	-	-
Dissipation factor, 1MHz	D-150	-	-
Comparative tracking index (CTI)	D-3638	Volt	-
Arc resistance	D-495	sec.	-
Volume resistibility	D-257	Ohm.cm	10 <sup>7-8</sup>
<b>Process Conditions</b>			
Cylinder temperature	-	°C	290-320
Mold temperature	-	°C	120-150

a: MD; Mold direction, TD; Transverse direction, b: P=150KPa, V=0.3m/s, PPS vs. carbon steel,  
c: Average value of MD & TD, d: UL file No. E53829, e: Own data



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