



# CZL-5000-U

■ **Product Summary:** CZL-5000-U is a pitch based carbon fiber and PTFE filled PPS compound that provides excellent self-lubrication performance with low wear and low friction.

■ **Color:** Black

## Engineering Properties

Properties	Test Method	Unit	Typical value
			Pitch-CF, PTFE & Others Self-lubrication
General Information			
<b>Physical</b>			
Density	ISO 1183-1	g/cm <sup>3</sup>	1.67
Water absorption, 23°C/24Hrs.	ISO 62	%	0.07
Mold shrinkage <sup>a</sup>	ISO 294-4	%	0.5/0.8
<b>Mechanical</b>			
Tensile strength	ISO 527-1,2	MPa	90
Tensile modulus	ISO 527-1,2	GPa	14.5
Tensile strain at break	ISO 527-1,2	%	0.8
Flexural strength	ISO 178	MPa	145
Flexural modulus	ISO 178	GPa	15.0
Flexural strain at flexural strength	ISO 178	%	1.1
Charpy impact strength, notched	ISO 179/1eA	kJ/m <sup>2</sup>	4
unnotched	ISO 179/1eU	kJ/m <sup>2</sup>	11
Co-eff. of friction <sup>b</sup> , static/dynamic	-	-	0.20/0.22
<b>Thermal</b>			
Temperature of deflection under load, 1.80MPa	ISO 75-1,2	°C	270
Co-eff. of linear thermal expansion <sup>a</sup> , -50~50 °C	ISO 11359-2	x 10 <sup>-5</sup> /K	1.3
Co-eff. of linear thermal expansion <sup>a</sup> , 100~200 °C	ISO 11359-2	x 10 <sup>-5</sup> /K	1.4
Flammability <sup>c</sup> /thickness (mm)	UL-94	-	V-0/0.8
<b>Electrical</b>			
Electric strength, t=1.0mm	IEC 60243-1	kV/mm	-
Relative permittivity, 1MHz	IEC 62631-2-1	-	-
Dielectric dissipation factor, 1MHz	IEC 62631-2-1	-	-
Comparative Tracking Index (CTI)	IEC 60112	V	-
Volume resistivity	IEC 62631-3-1	Ω·cm	10 <sup>8-10</sup>
<b>Molding Condition</b>			
Cylinder temperature	-	°C	290-320
Mold temperature	-	°C	130-150

a: Flow direction/Transverse direction

b: P=150kPa, V=0.3m/s, PPS vs. carbon steel

c: UL file No. E53829