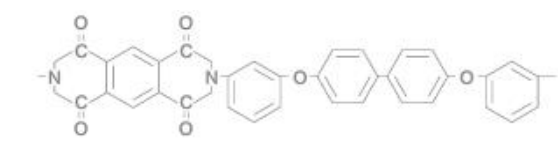


Thermoplastic Polyimide (TPI)



Polyimide (TPI) is the only Polyimide that has a glass transition temperature of 245°C and therefore exhibits high temperature stiffness properties and is superior to PEEK resin. TPI granules in general can be either amorphous or semi-crystalline. Regarding processing thermoplastic polyimide can be injection molded, extruded and recycled. it has high rigidity, excellent creep resistance and low thermal expansion. In addition, TPI has high electrical breakdown strength and excellent radiation resistance. Above all, TPI is suitable for designing thin walls and complex shapes with high dimensional stability. As it is generally lighter than metal or steel materials, it can be used as a replacement.

Application	Benefits
✓ Cable insulation: powder coating, liquid coating, extrusion coating	✓ Excellent Heat Dissipation
✓ Electrical components	✓ Maintains performance in high-temperature environments
✓ Ball and plain bearings	✓ PFAS-Free (No Fluorine Compounds)
✓ Structural components in high-performance environments	✓ Environmentally friendly and compliant with modern safety standards
✓ Washers	✓ Fibre Reinforcement Compatibility
✓ Seal rings	✓ Easily forms composites with high-performance thermoplastic polymers
✓ Pistons	✓ Thin Coatings, Minimal Volume
✓ Structural components of aircraft engines	✓ Enables lightweight, space-efficient applications with less material
✓ Resin for CFRP	✓ Elasticity
	✓ Offers mechanical flexibility for dynamic or precision parts
	✓ Radiation Resistance
	✓ Withstands exposure in nuclear, aerospace, and medical environments



Physical properties	unit	Test standard	TPI-VAT001G	TPI-VAT001P
Density	g/cm³	ASTM D 792	1.33	1.33
Mould Shrinkage	%	ISO 2577	0.74~085	0.74~085
Melt Flow Rate (400°C, 2.16Kg)	g/10min	ASTM D1238	13.5	13.5
Mechanical Properties				
Tensile stress (50mm/min)	MPa	GB/T 1040	90	90
Tensile modulus (1mm/min)	MPa	GB/T 1040	3000	3000
Elongation at Break(23°C)	%	GB/T 1040	80	80
Flexural Strength at break	MPa	GB/T 9341	115	115
Flexural Modulus (23°C)	MPa	GB/T 9341	2600	2600
HRC	M Scale	GB/T3398	100	100
Charpy Impact	KJ/m²	GB/T1843	13	13
Thermal Properties				
Glass Transition Tempreture	°C	GB/T 19466.2-2004	245	245
Melting Point	°C	GB/T 19466.2-2004	385	385
Thermal degradation	°C	TGA	560	560
HTD 1.82Mpa	°C	ASTM D648	230	230
RTI	°C	UL746	250	250
CLTE (MD/TD)	10-5 /°C	ASTM E831-19	5.5/5.5	5.5/5.5
Electrical properties				
Dielectric Strength(Air, 1.6mm)	KV/mm	GB/T 1408	16	16
Dielectric Constant(1 MHZ)		GB/T 1409	3.1	3.1
Dissipation Factor(1MHZ)		GB/T 1409	0.0035	0.0035
Injection Molding				
Pre-Dry Temp/Time	°C/h		200°C />5h	200°C />5h
Mold Temp.	°C		170°C~200°C	170°C~200°C
Nozzle Temp.	°C		380°C~410°C	380°C~410°C
Front Temp	°C		390°C~410°C	390°C~410°C
Middle	°C		390°C~410°C	390°C~410°C