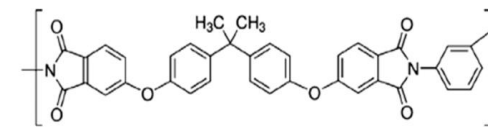




Polyetherimide (PEI)



Description

PEI-VAT002 & PEI VAT002HF is a general-purpose, unreinforced, amorphous amber-colored polyetherimide (PEI) resin with a glass transition temperature (Tg) of 217°C. It offers high heat resistance, high strength, and high modulus, along with broad thermal stability. Without the addition of any additives, it naturally exhibits flame retardancy and low smoke emission, with an oxygen index of 47% and a UL94 V-0 flammability rating. It has a heat deflection temperature (HDT) of 220°C and can be used continuously in operating temperatures ranging from -160°C to 180°C.

Typical properties

Physical properties	unit	Test standard	VAT002	VAT002HF	VAT002G10	VAT002G20	VAT002G30	VAT001	VAT002HFG10	VAT002HFG30
Density	g/cm ³	ISO 1183	1.27	1.27	1.3	1.42	1.51	1.27	1.34	1.51
Mould Shrinkage	%	ISO 2577, 294-4	0.5~0.7	0.5~0.7	0.3~0.5	0.3~0.5	0.2~0.4	0.5~0.7	0.3~0.5	0.2~0.4
Melt Flow Rate (337°C, 6.7Kg)	g/10min	ASTM D1238	6~10	10~15	5~6	5~6	3~6	6~10	7.5~10.5	4~6
Mechanical Properties										
Tensile stress (50mm/min)	MPa	ASTM D638	110	110	110	130	170	110	110	175
Tensile modulus (1mm/min)	MPa	ASTM D638	3500	3200	4500	6500	9300	3400	3300	10400
Elongation at Break(23°C)	%	ASTM D638	55	55	6	3	2.5	55	6	2.4
Flexural Modulus (23°C)	MPa	ASTM D790	3500	3300	4400	6500	8800	2800	4800	9700
Flexural Strength at break	MPa	ASTM D790	160	155	185	185	240	150	160	250
Charpy Impact (23°C)	kJ/m ²	GB/T1843	7	6	7	7	9	7	5	10
Thermal Properties										
HTD 1.82Mpa	°C	ASTM D648	202	202	205	205	205	200	190	210
CLTE (MD/TD)	ppm/K	ASTM E831-19	48/51	48/51	2.5/2.5	2.5/2.5	2.5/2.5	48/51	48/51	
Glass Transition Temperature	°C	GB/T 19466.2-2004	217	217	217	217	217	217	217	217
Electrical properties										
Dielectric Strength(Air, 1.6mm)	KV/mm	IEC 60243-1	21.1	32	25	25	25	21.1	32	26
Dielectric Constant(1 MHZ)	-	IEC 60250	3.1	3	3.5	3.5	3.5	3.1	3	3.4

Dissipation Factor(1MHZ)	E-4	IEC 60250	0.0017	0.006	0.0045	0.0045	0.0045	0.0017	0.006	0.0023
Volume resistivity(100V)	Ω ·cm	IEC 60093	10 ¹⁶	10 ¹⁶	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁶	10 ¹⁶	10 ¹⁵
Surface resistivity(100V)	Ω	IEC 60093	>10 ¹⁶	>10 ¹⁶	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁶	10 ¹⁶	10 ¹⁵
Injection Molding										
Pre-Dry Temp/Time	°C/h		160℃ / >6h	160℃ />6h	150℃ /4h-6h	150℃ /4h-6h	150℃ /4h-6h	160℃ /4h-6h	160℃ /4h-6h	160℃ /4h-6h
Mold Temp.	°C		130℃~180℃	130℃~180℃	130℃~180℃	130℃~180℃	140℃~180℃	130℃~180℃	130℃~180℃	130℃~180℃
Nozzle Temp.	°C		330℃~400℃	330℃~400℃	330℃~400℃	330℃~400℃	345℃~400℃	330℃~400℃	330℃~400℃	330℃~400℃
Front Temp	°C		345℃~400℃	345℃~400℃	345℃~400℃	345℃~400℃	345℃~400℃	345℃~400℃	345℃~400℃	345℃~400℃
Middle	°C		340℃~400℃	340℃~400℃	340℃~400℃	340℃~400℃	340℃~400℃	340℃~400℃	340℃~400℃	340℃~410℃
Rear Temp.	°C									
			325℃~400℃	325℃~400℃	325℃~400℃	325℃~400℃	330℃~400℃	325℃~400℃	325℃~400℃	325℃~400℃

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