EXTEM™ Resin VH1003P

REGION AMERICAS

DESCRIPTION

Transparent, Thermoplastic Polyimide (TPI) resin with a glass transition temperature (Tg) of 247C. Powder version of VH1003.

TYPICAL PROPERTY VALUES

Revision 20260420

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	96	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	96	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	50	%	ASTM D638
Tensile Modulus, 5 mm/min	3510	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	159	MPa	ASTM D790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	155	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	3170	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	95	MPa	ISO 527
Tensile Stress, break, 5 mm/min	78	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	8.5	%	ISO 527
Tensile Strain, break, 5 mm/min	50	%	ISO 527
Tensile Modulus, 1 mm/min	3110	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	123	MPa	ISO 178
Flexural Modulus, 2 mm/min	3080	MPa	ISO 178
Ball Indentation Hardness, H358/30	140	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, notched, 23°C	69	J/m	ASTM D256
Izod Impact, notched, -30°C	74	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	33	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	4	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	242	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	217	°C	ASTM D648
HDT, 0.45 MPa, 6.4 mm, unannealed	237	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	230	°C	ASTM D648
CTE, -40°C to 150°C, flow	5.E-05	1/°C	ASTM E831
CTE, -40°C to 150°C, xflow	5.E-05	1/°C	ASTM E831
Thermal Conductivity	0.22	W/m-°C	ASTM E1530

© 2026 Copyright by SABIC. All rights reserved

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, 23°C to 150°C, flow	5.E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	5.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	242	°C	ISO 306
Vicat Softening Temp, Rate B/120	238	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	228	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.3	-	ASTM D792
Mold Shrinkage on Tensile Bar, flow	0.5 – 0.7	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.5 – 0.7	%	SABIC method
Melt Flow Rate			
367°C/6.6 kgf	15.5	g/10 min	ASTM D1238
Density	1.3	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	1.75	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.6	%	ISO 62
Melt Volume Rate			
360°C/5.0 kg	8	cm³/10 min	ISO 1133
OPTICAL			
Light Transmission, 2.54 mm	58	%	ASTM D1003
Haze, 2.54 mm	2	%	ASTM D1003
ELECTRICAL			
Dielectric Strength, in oil, 3.2 mm	17	kV/mm	ASTM D149
Relative Permittivity, 100 Hz	3.41	-	ASTM D150
Relative Permittivity, 1 kHz	3.41	-	ASTM D150
Dissipation Factor			
50/60 Hz	0.025	-	IEC 60250
100 Hz	0.008	-	IEC 60250
1 kHz	0.001	-	IEC 60250
1 MHz	0.007	-	IEC 60250
Comparative Tracking Index	175	V	IEC 60112
FLAME CHARACTERISTICS			
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 3.0 mm	850	°C	IEC 60695-2-13
Oxygen Index (LOI)	45	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	380 – 405	°C	
Nozzle Temperature	375 – 400	°C	
Front - Zone 3 Temperature	380 – 405	°C	
Middle - Zone 2 Temperature	370 – 395	°C	
Rear - Zone 1 Temperature	360 – 380	°C	

© 2026 Copyright by SABIC. All rights reserved

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Mold Temperature	135 – 165	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

DISCLAIMER

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.

© 2026 Copyright by SABIC. All rights reserved