

Ultem* Resin XH6050M

Americas: COMMERCIAL

Enhanced flow Polyetherimidesulfone copolymer (Tg 247C) with internal mold release. ECO Conforming, UL94 V0 listing. Resin is subject to U.S. Commerce Control Laws (15CFR Chapter VII, Part 774).

Property

TYPICAL PROPERTIES ⁽¹⁾			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 5 mm/min	96	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	96	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	6	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	25	%	ASTM D 638
Tensile Modulus, 5 mm/min	3510	MPa	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	158	MPa	ASTM D 790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	155	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	3170	MPa	ASTM D 790
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	8.4	%	ISO 527
Tensile Strain, break, 5 mm/min	16.3	%	ISO 527
Tensile Modulus, 1 mm/min	3120	MPa	ISO 527
Flexural Stress, break, 2 mm/min	123	MPa	ISO 178
Flexural Modulus, 2 mm/min	3070	MPa	ISO 178
Hardness, H358/30	138	MPa	ISO 2039-1
IMPACT	Value	Unit	Standard
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D 4812
Izod Impact, notched, 23°C	69	J/m	ASTM D 256
Izod Impact, notched, -30°C	74	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	33	J	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	196	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	147	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	6	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m ²	ISO 180/1A
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m ²	ISO 179/1eU
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	242	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	217	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	237	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	230	°C	ASTM D 648
CTE, -40°C to 150°C, flow	5.E-05	1/°C	ASTM E 831
CTE, -40°C to 150°C, xflow	5.E-05	1/°C	ASTM E 831
Thermal Conductivity	0.22	W/m-°C	ASTM E 1530
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	240	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	228	°C	ISO 75/Af
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.3	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2)	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	12.5	g/10 min	ASTM D 1238
Density	1.3	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	1.75	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.65	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	8	cm ³ /10 min	ISO 1133
ELECTRICAL	Value	Unit	Standard
Dielectric Strength, in oil, 3.2 mm	14	kV/mm	ASTM D 149
Dissipation Factor, 50/60 Hz	0.018	-	IEC 60250
Dissipation Factor, 100 Hz	0.008	-	IEC 60250
Dissipation Factor, 1 kHz	0.001	-	IEC 60250
Dissipation Factor, 1 MHz	0.007	-	IEC 60250
Comparative Tracking Index	175	V	IEC 60112
FLAME CHARACTERISTICS	Value	Unit	Standard
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

Source GMD, last updated:03/30/2004

Processing

Parameter	Value	Unit
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
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

Source GMD, last updated:03/30/2004

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR [\(LOCAL SALES OFFICE\)](#) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

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