

# ULTEM™ RESIN MD130

REGION EUROPE

## DESCRIPTION

Transparent, standard flow Polyetherimide (Tg 217C). ECO Conforming. US FDA and EU Food Contact compliant.

## TYPICAL PROPERTY VALUES

Revision 20230607

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	110	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	90	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	7	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	60	%	ASTM D638
Tensile Modulus, 5 mm/min	3580	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	160	MPa	ASTM D790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	165	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	3550	MPa	ASTM D790
Flexural Modulus, 2.6 mm/min, 100 mm span	3510	MPa	ASTM D790
Taber Abrasion, CS-17, 1 kg	10	mg/1000cy	SABIC method
Tensile Stress, yield, 50 mm/min	105	MPa	ISO 527
Tensile Stress, break, 50 mm/min	85	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	60	%	ISO 527
Tensile Modulus, 1 mm/min	3200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	160	MPa	ISO 178
Flexural Modulus, 2 mm/min	3300	MPa	ISO 178
Ball Indentation Hardness, H358/30	140	MPa	ISO 2039-1
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	1335	J/m	ASTM D4812
Izod Impact, notched, 23°C	53	J/m	ASTM D256
Izod Impact, notched, -30°C	55	J/m	ASTM D256
Izod Impact, Reverse Notched, 3.2 mm	1335	J/m	ASTM D256
Gardner, 23°C	36	J	ASTM D3029
Instrumented Dart Impact Total Energy, 23°C	38	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	6	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	6	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	4	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy Impact, notched, 23°C	10	kJ/m <sup>2</sup>	ISO 179/2C
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	4	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	218	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	208	°C	ASTM D648

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CTE, -20°C to 150°C, flow	5.58E-05	1/°C	ASTM E831
CTE, -20°C to 150°C, xflow	5.4E-05	1/°C	ASTM E831
Thermal Conductivity	0.22	W/m·°C	ASTM C177
Thermal Conductivity	0.24	W/m·°C	ISO 8302
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 A/50	215	°C	ISO 306
Vicat Softening Temp, Rate B/50	211	°C	ISO 306
Vicat Softening Temp, Rate B/120	212	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	200	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	190	°C	ISO 75/Ae
<b>PHYSICAL</b>			
Specific Gravity	1.27	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.25	%	ASTM D570
Water Absorption, (23°C/Saturated)	1.25	%	ASTM D570
Mold Shrinkage on Tensile Bar, flow	0.5 – 0.7	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 337°C/6.6 kgf	9	g/10 min	ASTM D1238
Poisson's Ratio	0.3	-	ASTM E132
Density	1.27	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/saturated)	1.25	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.7	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	13	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Volume Resistivity	1.E+17	Ω.cm	ASTM D257
Dielectric Strength, in air, 1.6 mm	32.7	kV/mm	ASTM D149
Dielectric Strength, in oil, 1.6 mm	27.9	kV/mm	ASTM D149
Dielectric Strength, in oil, 3.2 mm	19.6	kV/mm	ASTM D149
Relative Permittivity, 100 Hz	3.15	-	ASTM D150
Relative Permittivity, 1 kHz	3.15	-	ASTM D150
Dissipation Factor, 100 Hz	0.0015	-	ASTM D150
Dissipation Factor, 1 kHz	0.0012	-	ASTM D150
Dissipation Factor, 2450 MHz	0.0025	-	ASTM D150
Volume Resistivity	1.E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	IEC 60093
Dielectric Strength, in oil, 0.8 mm	33	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	25	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.0005	-	IEC 60250
Dissipation Factor, 1 MHz	0.006	-	IEC 60250
Dissipation Factor, 2450 MHz	0.0025	-	IEC 60250
Comparative Tracking Index	150	V	IEC 60112
Comparative Tracking Index, M	100	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.9	-	IEC 60250

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>FLAME CHARACTERISTICS</b>			
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	47	%	ISO 4589
<b>INJECTION MOLDING</b>			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	350 – 400	°C	
Nozzle Temperature	345 – 400	°C	
Front - Zone 3 Temperature	345 – 400	°C	
Middle - Zone 2 Temperature	340 – 400	°C	
Rear - Zone 1 Temperature	330 – 400	°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	
<b>EXTRUSION BLOW MOLDING</b>			
Drying Temperature	140 – 150	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.01 – 0.02	%	
Melt Temperature (Parison)	320 – 355	°C	
Barrel - Zone 1 Temperature	325 – 350	°C	
Barrel - Zone 2 Temperature	330 – 355	°C	
Barrel - Zone 3 Temperature	330 – 355	°C	
Barrel - Zone 4 Temperature	330 – 355	°C	
Adapter - Zone 5 Temperature	330 – 355	°C	
Head - Zone 6 - Top Temperature	330 – 355	°C	
Head - Zone 7 - Bottom Temperature	330 – 355	°C	
Screw Speed	10 – 70	rpm	
Mold Temperature	65 – 175	°C	
Die Temperature	325 – 355	°C	

## MORE INFORMATION

For curve data and CAE cards, please visit and register at <https://materialfinder.sabic-specialties.com>

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