

**Product Texts**

ULTEM MD131AR Resin is an unreinforced amorphous polyetherimide (PEI) resin that may offer a high glass transition temperature (Tg) of 217°C and global food compliance, improve food sticking. Features are excellent mechanical, electrical and dimensional properties up to high temperatures. The material may offer very good chemical resistance for an amorphous material. The material is available in opaque colors.

Processing/Physical Characteristics	Value	Unit	Test Standard
<b>ISO Data</b>			
Melt volume-flow rate, MVR	25	cm <sup>3</sup> /10min	ISO 1133
Temperature	360	°C	-
Load	5	kg	-
<b>ASTM Data</b>			
Melt Flow Index, MFI	17.8	g/10min	ASTM D 1238
Temperature	337	°C	-
Load	6.6	kg	-
Mold Shrinkage, MD	0.006	mm/mm	ASTM D 955
Mold Shrinkage, TD	0.006	mm/mm	ASTM D 955

Mechanical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Tensile Modulus	3200	MPa	ISO 527
Yield stress	110	MPa	ISO 527
Yield strain	6	%	ISO 527
Strain at break	50	%	ISO 527
Flexural modulus, 23°C	3300	MPa	ISO 178
Charpy notched impact strength, +23°C	4	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	4	kJ/m <sup>2</sup>	ISO 179/1eA
Izod impact strength, +23°C	N	kJ/m <sup>2</sup>	ISO 180/1U
Izod notched impact strength, +23°C	5	kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength	5	kJ/m <sup>2</sup>	ISO 180/1A
Temperature	-30	°C	-
Rockwell hardness	M 106	-	ISO 2039-2
Ball indentation hardness	140	MPa	ISO 2039-1
<b>ASTM Data</b>			
Tensile Modulus	3350	MPa	ASTM D 638
Tensile Strength at Yield	115	MPa	ASTM D 638
Elongation at Yield	7	%	ASTM D 638
Elongation at Break	60	%	ASTM D 638
Flexural Modulus	3200	MPa	ASTM D 790
Rockwell Hardness	M 109	-	ASTM D 785
Taber Abrasion Resistance	10	mg/1000 cycles	ASTM D 1044
Izod Impact notched, 1/8 in	32	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	41	J/m	ASTM D 256
Temperature	-30	°C	-
Izod Impact unnotched, 1/8 in	1600	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Temp. of deflection under load, 1.80 MPa	192	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	209	°C	ISO 75-1/-2
Vicat softening temperature, A	215	°C	ISO 306
Vicat softening temperature, B	211	°C	ISO 306
Coeff. of linear therm. expansion, parallel	52	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	52	E-6/K	ISO 11359-1/-2
Oxygen index	47	%	ISO 4589-1/-2
<b>ASTM Data</b>			
Coefficient of Thermal Expansion, MD	56	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	54	E-6/K	ASTM D 696
DTUL @ 66 psi	207	°C	ASTM D 648
DTUL @ 264 psi	190	°C	ASTM D 648

**ULTEM™ Resin MD131AR**

PEI

Saudi Basic Industries Corporation (SABIC)

Vicat Temperature	211	°C	ASTM D 1525
Thermal Conductivity, solid state	0.22	W/(m K)	ASTM C 177
Limiting Oxygen Index	44	%	ASTM D 2863

Electrical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Relative permittivity, 1MHz	2.9	-	IEC 62631-2-1
Dissipation factor, 1MHz	60	E-4	IEC 62631-2-1
Volume resistivity	1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	25	kV/mm	IEC 60243-1
Comparative tracking index	150	-	IEC 60112
<b>ASTM Data</b>			
Dielectric Strength, Short Time	28	kV/mm	ASTM D 149
Volume Resistivity	1E17	Ohm*cm	ASTM D 257
Arc Resistance	150	s	ASTM D 495

Other properties	Value	Unit	Test Standard
Water absorption	1.25	%	Sim. to ISO 62
Humidity absorption	0.7	%	Sim. to ISO 62
Density	1270	kg/m <sup>3</sup>	ISO 1183
Water Absorption, 24hr	0.25	%	ASTM D 570
Water Absorption, Equilibrium	1.25	%	ASTM D 570
Density	1270	kg/m <sup>3</sup>	ASTM D 792

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	150	°C	-
Pre-drying - Time	4 - 6	h	-
Processing humidity	≤0.02	%	-
Melt temperature	350 - 410	°C	-
Mold temperature	135 - 180	°C	-
Zone 1	330 - 400	°C	-
Zone 2	340 - 405	°C	-
Zone 3	345 - 415	°C	-
Nozzle temperature	345 - 405	°C	-
Screw speed	0.2 - 0.3	rpm	-
Back pressure	0.3 - 0.7	MPa	-

Processing Recommendation Extrusion	Value	Unit	Test Standard
Pre-drying - Temperature	140 - 150	°C	-
Pre-drying - Time	4 - 6	h	-
Processing humidity	≤0.02	%	-
Melt temperature	320 - 355	°C	-
Mold temperature	65 - 175	°C	-
Zone 1	325 - 350	°C	-
Zone 2	330 - 355	°C	-
Zone 3	330 - 355	°C	-
Zone 4	330 - 355	°C	-
Zone 5	330 - 355	°C	-
Nozzle temperature	325 - 355	°C	-

**Characteristics****Processing**

Injection Molding, Film Extrusion, Profile Extrusion, Other Extrusion, Blow Molding, Compression Molding, Additive Manufacturing

**Certifications**

Food contact

## ULTEM™ Resin MD131AR

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### Special Characteristics

Opaque

### Features

Amorphous, Foamable, High Gloss

### Chemical Resistance

General Chemical Resistance

### Applications

Packaging

### Regional Availability

North America, Europe, Asia Pacific, South and Central America