

Product Texts

ULTEM 9085 resin is a polyetherimide blend. The material is designed for use in Aerospace cabin interiors but can also be used for FDM printing and in e.g. Rail applications. The material meets Aerospace FAR25.853 and OSU55/55 heat release requirements. It is approved by main Aerospace OEMs. Material has Rail EN45545 R6-HL3 rating. The material may offer excellent flow, stiffness and ductility balance, enabling thin wall lightweight designs. Material is opaque and can be custom colored.

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	40	cm ³ /10min	ISO 1133
Temperature	340	°C	-
Load	5	kg	-

ASTM Data			
Melt Flow Index, MFI	8.9	g/10min	ASTM D 1238
Temperature	295	°C	-
Load	6.6	kg	-

Mechanical properties	Value	Unit	Test Standard
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ISO Data			
Tensile Modulus	2850	MPa	ISO 527
Yield stress	94	MPa	ISO 527
Yield strain	6.7	%	ISO 527
Strain at break	70	%	ISO 527
Flexural modulus, 23°C	2700	MPa	ISO 178
Charpy impact strength, +23°C	N	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	N	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	10	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	8	kJ/m ²	ISO 179/1eA
Izod impact strength, +23°C	N	kJ/m ²	ISO 180/1U
Izod notched impact strength, +23°C	10	kJ/m ²	ISO 180/1A
Izod notched impact strength	8	kJ/m ²	ISO 180/1A
Temperature	-30	°C	-
Rockwell hardness	M 115	-	ISO 2039-2

ASTM Data			
Tensile Modulus	3000	MPa	ASTM D 638
Tensile Strength at Yield	86	MPa	ASTM D 638
Elongation at Yield	7	%	ASTM D 638
Elongation at Break	70	%	ASTM D 638
Flexural Modulus	2800	MPa	ASTM D 790
Izod Impact notched, 1/8 in	115	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	65	J/m	ASTM D 256
Temperature	-30	°C	-
Izod Impact unnotched, 1/8 in	N	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
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ISO Data			
Temp. of deflection under load, 1.80 MPa	152	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	169	°C	ISO 75-1/-2
Vicat softening temperature, B	173	°C	ISO 306
Coeff. of linear therm. expansion, parallel	65	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	70	E-6/K	ISO 11359-1/-2

ASTM Data			
Coefficient of Thermal Expansion, MD	65	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	70	E-6/K	ASTM D 696
DTUL @ 66 psi	169	°C	ASTM D 648
DTUL @ 264 psi	153	°C	ASTM D 648
Limiting Oxygen Index	49	%	ASTM D 2863

Other properties	Value	Unit	Test Standard
Water absorption	0.7	%	Sim. to ISO 62

ULTEM™ Resin 9085

PEI

Saudi Basic Industries Corporation (SABIC)

Humidity absorption	0.4	%	Sim. to ISO 62
Density	1340	kg/m ³	ISO 1183
Density	1340	kg/m ³	ASTM D 792

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	120 - 130	°C	-
Pre-drying - Time	4 - 6	h	-
Processing humidity	≤0.02	%	-
Melt temperature	330 - 350	°C	-
Mold temperature	120 - 150	°C	-
Zone 1	315 - 340	°C	-
Zone 2	325 - 345	°C	-
Zone 3	330 - 350	°C	-
Nozzle temperature	330 - 350	°C	-
Back pressure	0.3 - 0.7	MPa	-

Processing Recommendation Extrusion	Value	Unit	Test Standard
Type of extrusion	profile	-	-
Pre-drying - Temperature	120 - 130	°C	-
Pre-drying - Time	4 - 6	h	-
Processing humidity	≤0.02	%	-
Melt temperature	280 - 310	°C	-
Feed temperature	80 - 100	°C	-
Zone 1	265 - 275	°C	-
Zone 2	280 - 295	°C	-
Zone 3	290 - 305	°C	-
Zone 4	295 - 310	°C	-
Nozzle temperature	260 - 310	°C	-

Characteristics**Processing**

Injection Molding, Profile Extrusion, Sheet Extrusion, Thermoforming, Additive Manufacturing

Special Characteristics

Flame retardant, Heat stabilized or stable to heat, Opaque

Features

Amorphous, Creep Resistance, Ductile, Good Adhesion, Low Smoke

Chemical Resistance

General Chemical Resistance, Hydrolytically Stable

Applications

Aircraft and Aerospace, Filament for 3D Printing

Regional Availability

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