ULTEM™ Resin 9085
Americas: COMMERCIAL

High flow Polyetherimide blend. Meets FAR 25.853 and OSU 65/65 with low toxicity, smoke and flame evolution.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	850	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	750	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	72	%	ASTM D 638
Tensile Modulus, 5 mm/min	35000	kgf/cm²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1400	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	29700	kgf/cm²	ASTM D 790
Tensile Stress, yield, 5 mm/min	88	MPa	ISO 527
Tensile Stress, break, 5 mm/min	71	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	6.7	%	ISO 527
Tensile Strain, break, 5 mm/min	50	%	ISO 527
Tensile Modulus, 1 mm/min	3050	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	2750	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	11	cm-kgf/cm	ASTM D 256
Izod Impact, notched 80*10*4 +23°C	13	kJ/m²	ISO 180/1A
THERMAL			
HDT, 1.82 MPa, 3.2mm, unannealed	153	°C	ASTM D 648
Vicat Softening Temp, Rate B/120	173	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	152	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.34	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method

(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.
(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.
(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
PHYSICAL			
Melt Flow Rate, 295°C/6.6 kgf	8.9	g/10 min	ASTM D 1238
Density	1.34	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.39	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.17	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	65	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS			
FAA Flammability, FAR 25.853 A/B	<5	-	FAR 25.853
OSU total heat release (2 minute test)	16	kW-min/m²	FAR 25.853
OSU peak heat release rate (5 minute test)	36	kW/m²	FAR 25.853
Vertical Burn a (60s) passes at	2	sec	FAR 25.853
Oxygen Index (LOI)	49	%	ASTM D 2863

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	135	°C
Drying Time	4 - 6	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	330 - 350	°C
Nozzle Temperature	330 - 350	°C
Front - Zone 3 Temperature	330 - 350	°C
Middle - Zone 2 Temperature	325 - 345	°C
Rear - Zone 1 Temperature	315 - 340	°C
Mold Temperature	120 - 150	°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
Profile Extrusion		
Drying Temperature	120 - 130	°C
Drying Time	4 - 6	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	280 - 310	°C
Barrel - Zone 1 Temperature	265 - 275	°C
Barrel - Zone 2 Temperature	280 - 295	°C
Barrel - Zone 3 Temperature	290 - 305	°C
Barrel - Zone 4 Temperature	295 - 310	°C
Hopper Temperature	80 - 100	°C
Adapter Temperature	270 - 310	°C
Die Temperature	260 - 310	°C
Calibrator Temperature	130 - 160	°C

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