

## Ultem\* Resin 2210F

## Europe-Africa-Middle East: COMMERCIAL

20% Glass fiber filled, enhanced flow Polyetherimide (Tg 217C). US FDA and European Food Contact approved. Effective June, 2007 this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HU2210.

### Property

TYPICAL PROPERTIES <sup>(1)</sup>			
	Value	Unit	Standard
<b>MECHANICAL</b>			
Taber Abrasion, CS-17, 1 kg	17	mg/1000cy	SABIC Method
Tensile Stress, break, 5 mm/min	140	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	6800	MPa	ISO 527
Flexural Stress, break, 2 mm/min	210	MPa	ISO 178
Flexural Modulus, 2 mm/min	6500	MPa	ISO 178
Hardness, H358/30	150	MPa	ISO 2039-1
<b>IMPACT</b>			
Izod Impact, unnotched 80*10*4 +23°C	30	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	30	kJ/m <sup>2</sup>	ISO 180/1U
Charpy Impact, notched, 23°C	9	kJ/m <sup>2</sup>	ISO 179/2C
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	35	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	35	kJ/m <sup>2</sup>	ISO 179/1eU
<b>THERMAL</b>			
Thermal Conductivity	0.28	W/m-°C	ISO 8302
CTE, 23°C to 150°C, flow	2.5E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	6.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	223	°C	ISO 306
Vicat Softening Temp, Rate B/50	212	°C	ISO 306
Vicat Softening Temp, Rate B/120	218	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	210	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	205	°C	ISO 75/Ae
<b>PHYSICAL</b>			
Mold Shrinkage on Tensile Bar, flow (2)	0.3 - 0.5	%	SABIC Method
Density	1.42	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	1	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.55	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	10	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Volume Resistivity	1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 0.8 mm	34	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	26	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 50/60 Hz	3.1	-	IEC 60250
Relative Permittivity, 1 MHz	3	-	IEC 60250

Dissipation Factor, 50/60 Hz	0.0008	-	IEC 60250
Dissipation Factor, 1 MHz	0.0025	-	IEC 60250
Dissipation Factor, 2450 MHz	0.0049	-	IEC 60250
Comparative Tracking Index	150	V	IEC 60112
Comparative Tracking Index, M	100	V	IEC 60112
<b>FLAME CHARACTERISTICS</b>	<b>Value</b>	<b>Unit</b>	<b>Standard</b>
Glow Wire Flammability Index 960°C, passes at	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	46	%	ISO 4589

Source GMD, last updated:10/11/2006

## Processing

Parameter	Value	Unit
Injection Molding		
Drying Temperature	150	°C
Drying Time	4 - 6	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	370 - 410	°C
Nozzle Temperature	360 - 410	°C
Front - Zone 3 Temperature	370 - 420	°C
Middle - Zone 2 Temperature	360 - 410	°C
Rear - Zone 1 Temperature	350 - 400	°C
Hopper Temperature	80 - 120	°C
Mold Temperature	140 - 180	°C

Source GMD, last updated:10/11/2006

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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