ULTEM™ Resin HU2210 - Americas

Polyether Imide

SABIC

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Technical Data

Product Description

20% Glass fiber filled, enhanced flow Polyetherimide (Tg 217C). ECO Conforming. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI); food contact compliant; Steam, Gamma, EtO, and E-beam sterilizable.

General

Material Status	• Commercial: Active		
UL Yellow Card [1]	• E121562-221093		
Search for UL Yellow Card	• SABIC • ULTEM™ Resin		
Availability	• Latin America	• North America	
Filler / Reinforcement	• Glass Fiber, 20% Filler by Weight		
Features	• Amorphous • Biocompatible • Chemical Resistant • Creep Resistant • E-beam Sterilizable • Ethylene Oxide Sterilizable • Flame Retardant	• Food Contact Acceptable • Good Adhesion • Good Dimensional Stability • Good Thermal Stability • High Heat Resistance • High Stiffness • High Strength	• Hydrolytically Stable • Low Shrinkage • Low Smoke Emission • Low Toxicity • Radiation Sterilizable • Steam Sterilizable
Uses	• Fluid Handling • Medical Devices	• Medical/Healthcare Applications • Optical Applications	• Personal Care • Pharmaceuticals
Processing Method	• Injection Molding		

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.42	g/cm³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)	8.4	g/10 min	ASTM D1238
Molding Shrinkage - Flow (3.20 mm)	0.30 to 0.50	%	Internal Method
Water Absorption			ISO 62
Saturation, 23°C	1.0	%	
Equilibrium, 23°C, 50% RH	0.55	%	

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- [3]	6890	MPa	ASTM D638
--	6800	MPa	ISO 527-1/1
Tensile Strength			
Yield [4]	139	MPa	ASTM D638
Yield	140	MPa	ISO 527-2/5
Break [4]	140	MPa	ASTM D638
Break	140	MPa	ISO 527-2/5
Tensile Elongation			
Yield [4]	4.0	%	ASTM D638
Yield	5.0	%	ISO 527-2/5
Break [4]	4.0	%	ASTM D638
Break	5.0	%	ISO 527-2/5
Flexural Modulus			
50.0 mm Span [5]	6890	MPa	ASTM D790
-- [6]	6500	MPa	ISO 178
Flexural Stress			
-- [6, 7]	210	MPa	ISO 178
Yield, 50.0 mm Span [5]	227	MPa	ASTM D790

Form No. TDS-142529-en

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength [8] (23°C)	8.0	kJ/m²	ISO 179/1eA
Notched Izod Impact			
23°C	64	J/m	ASTM D256
-30°C [9]	5.0	kJ/m²	ISO 180/1A
23°C [9]	5.0	kJ/m²	ISO 180/1A
Unnotched Izod Impact (23°C)	480	J/m	ASTM D4812
Instrumented Dart Impact			ASTM D3763
23°C, Total Energy	13.0	J	

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed, 6.40 mm	211	°C	
Vicat Softening Temperature			
--	226	°C	ASTM D1525 [10]
--	218	°C	ISO 306/B120
--	212	°C	ISO 306/B50
CLTE			ASTM E831
Flow : -40 to 40°C	2.5E-5	cm/cm/°C	
Transverse : -40 to 40°C	5.0E-5	cm/cm/°C	
RTI Elec	170	°C	UL 746B
RTI Imp	170	°C	UL 746B
RTI Str	170	°C	UL 746B

Electrical	Nominal Value	Test Method
Arc Resistance [11]	PLC 6	ASTM D495
Comparative Tracking Index (CTI)	PLC 4	UL 746A
High Amp Arc Ignition (HAI)		UL 746A
> 1.5 mm	PLC 3	
> 3.0 mm	PLC 4	
High Voltage Arc Resistance to Ignition (HVAR)	PLC 2	UL 746A
Hot-wire Ignition (HWI)		UL 746A
> 1.5 mm	PLC 2	
> 3.0 mm	PLC 1	

Flammability	Nominal Value	Test Method
Flame Rating		UL 94
> 0.41 mm	V-0	
> 1.9 mm	5VA	

Injection	Nominal Value	Unit
Drying Temperature	150	°C
Drying Time	4.0 to 6.0	hr
Suggested Max Moisture	0.020	%
Suggested Shot Size	40 to 60	%
Rear Temperature	330 to 400	°C
Middle Temperature	340 to 400	°C
Front Temperature	345 to 400	°C
Nozzle Temperature	345 to 400	°C
Processing (Melt) Temp	350 to 400	°C
Mold Temperature	135 to 165	°C
Back Pressure	0.300 to 0.700	MPa
Screw Speed	40 to 70	rpm
Vent Depth	0.025 to 0.076	mm

Injection Notes

- Drying Time (Cumulative): 24 hr

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Notes

[1] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[2] Typical properties: these are not to be construed as specifications.

[3] 5.0 mm/min

[4] Type I, 5.0 mm/min

[5] 1.3 mm/min

[6] 2.0 mm/min

[7] at Yield

[8] 80*10*4 sp=62mm

[9] 80*10*4 mm

[10] Rate A (50°C/h), Loading 2 (50 N)

[11] Tungsten Electrode

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Where to Buy

Supplier

SABIC
Web: http://www.sabic.com/

Distributor

3Polymer (Guangzhou) Chemical Technology Co., Ltd.
Telephone: +86-20-3466-7988
Web: http://3polymer.com
Availability: China

Amco Polymers
Telephone: 800-262-6685
Web: http://www.amcopolymers.com/
Availability: North America

Chase Plastic Services, Inc.
Chase Plastics Services is a North American distributor with representatives throughout the region. Please find your rep here: http://www.chaseplastics.com/contact/locations
Telephone: 800-232-4273
Web: http://www.chaseplastics.com/
Availability: North America

Nexeo Plastics
Nexeo Plastics is leading global resin distributor with the technical resources you need to overcome material challenges. Visit us on the web at www.nexeoplastics.com.
Telephone: 833-446-3936
Web: https://www.nexeoplastics.com/
Availability: North America

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