ULTEM™ RESIN 2200

REGION EUROPE

DESCRIPTION

20% Glass fiber filled, standard flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing. NSF 51 listing, WRAS certification in recognized colors.

INDUSTRY	SUB INDUSTRY
Automotive	Heavy Truck, Automotive Interiors, Bus, Automotive Under the Hood
Building and Construction	Outdoor, Lawn and Landscape, Construction
Consumer	Sport/Leisure, Personal Accessory, Home Appliance, Personal Recreation, Commercial Appliance, Recreational Vehicle
Electrical and Electronics	Electrical Devices and Displays, Lighting, Electrical Components and Infrastructure
Hydrocarbon and Energy	Fossil, Wind Energy, Energy Storage
Industrial	Defense, Semiconductors, Textile, Servomotor, Electronic Material Handling, Industrial Material Handling, Composite
Mass Transportation	Aircraft Interiors, Specialty Vehicles, Rail
Packaging	Rigid Packaging

TYPICAL PROPERTY VALUES

Revision 20190717

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
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
Ball Indentation Hardness, H358/30	150	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched 80*10*4 +23°C	30	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	30	kJ/m²	ISO 180/1U
Charpy Impact, notched, 23°C	9	kJ/m²	ISO 179/2C
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	35	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	35	kJ/m²	ISO 179/1eU
THERMAL			
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

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	205	°C	ISO 75/Ae
Relative Temp Index, Elec [1]	170	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	170	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	170	°C	UL 746B
PHYSICAL			
Mold Shrinkage on Tensile Bar, flow	0.3 – 0.5	%	SABIC method
Density	1.42	g/cm³	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	7	cm³/10 min	ISO 1133
ELECTRICAL			
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, 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 [2]	150	V	IEC 60112
Comparative Tracking Index, M [2]	100	V	IEC 60112
Relative Permittivity, 50/60 Hz	3.1	-	IEC 60250
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 3	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 4	≥3	mm	UL 746A
High Voltage Arc Track Rate {PLC}	2	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E121562-221093	-	-
UL Yellow Card Link 2	E121562-502535	-	-
UL Recognized, 94-5VA Flame Class Rating	≥1.9	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥0.41	mm	UL 94
UV-light, water exposure/immersion	F1	-	UL 746C
Glow Wire Flammability Index 960°C, passes at [2]	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	46	%	ISO 4589
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	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Middle - Zone 2 Temperature	360 – 410	°C	
Rear - Zone 1 Temperature	350 – 400	°C	
Hopper Temperature	80 – 120	°C	
Mold Temperature	140 – 180	°C	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

(2) Value shown here is based on internal measurement.

DISCLAIMER