

ULTEM™ RESIN 2400

DESCRIPTION

ULTEM 2400 resin is a standard flow 40% glass fiber reinforced polyetherimide resin. The material is RoHS compliant and is intrinsically flame retardant without the use of FR modifiers offering UL94 V0 ratings and FAR25.853 performance. The material may offer excellent dimension stability, strength, stiffness and creep resistance up to high temperature due to its high glass transition temperature of 217°C. The material is opaque and can be custom colored.

ISCC+ certified renewable bio-based solutions are available for this grade via differentiated color nomenclature.

GENERAL INFORMATION	
Features	Flame Retardant, Chemical Resistance, Hydrolytic Stability, Low Warpage, Low Smoke and Toxicity, Dielectrics, Amorphous, Low Shrinkage, Sustainable (bio-based offerings), Non halogenated flame retardant, Electroplatable, Low ionics/Outgassing/Liquid particle count, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, No PFAS intentionally added
Fillers	Glass Fiber
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Heavy Truck, Automotive Under the Hood, Aerospace, Motorcycle, Recreational/Specialty Vehicles
Building and Construction	Building Component, Water Management
Consumer	Consumer Goods, Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance, Furniture
Electrical and Electronics	Energy Management, Drone Solutions, Mobile Phone - Computer - Tablets, Circuit Boards/Additives, Lighting, Printer Copier, Speaker - Earphone, Wireless Communication
Hygiene and Healthcare	Personal and Professional Hygiene, Pharmaceutical Packaging and Drug Delivery, Surgical devices, General Healthcare, Patient Testing
Industrial	Electrical, Material Handling, Textile, Eyewear
Mass Transportation	Rail
Packaging	Industrial Packaging

TYPICAL PROPERTY VALUES

Revision 20241122

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL (1)			
Tensile Stress, brk, Type I, 5 mm/min	179	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.5	%	ASTM D638
Tensile Modulus, 5 mm/min	11720	MPa	ASTM D638
Flexural Stress, brk, 2.6 mm/min, 100 mm span	241	MPa	ASTM D790
Flexural Modulus, 2.6 mm/min, 100 mm span	11720	MPa	ASTM D790
Hardness, Rockwell M	114	-	ASTM D785
Tensile Stress, break, 5 mm/min	180	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	11500	MPa	ISO 527
Flexural Stress, break, 2 mm/min	240	MPa	ISO 178
Flexural Modulus, 2 mm/min	10000	MPa	ISO 178
Ball Indentation Hardness, H358/30	170	MPa	ISO 2039-1

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CHEMISTRY THAT MATTERS"



Table Pro Arission, C5-17, 1sig 20 mij j000000 586 Crieding MARCET*** TURNICATION IT Implication ARTM 2256 Rood impact, Contocked, 23°C 450 1/m ARTM 2256 Rood impact, Contocked, 23°C 450 1/m ARTM 2256 Rood impact, Contocked, 23°C 35 1/m² 80 180/11 Rood impact, Contocked, 80°010°4-30°C 35 1/m² 80 180/11 Chart 7 1/m² 80 180/11 TCT 1/m² 80 180/11 80 180/11 TCT 1/m² 80 180/11 80 180/11 CHARD 1/m² 80 180/11 80 180/11 ADD, Collegate Anim, Collegate	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
ibud impact, noticed, 23°C 12 du dimpact, Reverse Nocthed, 23°Cm 480 1/m ASTM D256 Ibud impact, Lewerse Nocthed, 23°C 427 1/m ASTM D4812 Ibud mipact, unnotched 80°10°4 (23°C 35 41 pm 100 llayout, 100 pm Ibud impact, unnotched 80°10°4 (30°C) 35 41 pm 100 llayout, 100 pm 20°C, Unnotch 500 pm 40 31 pm 50 179 pm 20°C, Unnotch 500 pm 40 31 pm 50 179 pm 30°C, Unnotch 500 pm 40 31 pm 50 179 pm 30°C, Unnotch 500 pm 40 31 pm 50 179 pm 70°C, Unnotch 500 pm 40 31 pm 50 179 pm 70°C, Unnotch 500 pm 40 31 pm 50 179 pm 70°C, Unnotch 500 pm 40 40 40 40 70°C, Unnotch 500 pm 40 40 40 40 40 70°C, Clost 50°C flow 14 pm 10 60 50 13 3892 70°C, Elso 150°C, flow 14 pm 90 50 50 50 70°C, 22°C to 150°C, flow	Taber Abrasion, CS-17, 1 kg	20	mg/1000cy	SABIC method
tool (myact, keene Notched, 3.2 mm) 480 l/m ASTM 0441 (2014) tool (myact, unnotched, 327°C 497 1/m ASTM 0441 (2014) 260 (myact, unnotched, 90°10°4 - 30°C 35 1/m² 150 180/10 270°C, Unnotch 680°10°4 - 40°C 40 1/m² 150 179/164 280°C, Unnotch 1899e 80°10°4 spe 20°m 40 1/m² 150 179/164 280°C, Unnotch 1899e 80°10°4 spe 20°m 40 1/m² 150 179/164 280°C, Unnotch 1899e 80°10°4 spe 20°m 40 1/m² 150 179/164 280°C, Unnotch 1899e 80°10°4 spe 20°m 24 0° ASIM 1964 280°C, Unnotch 1899e 80°10°4 spe 20°m 24 0° ASIM 1964 280°C, Say	IMPACT (1)			
tool impact, unnotched 30°10'4 23°C 427 1/1 Ast March 50 180 1/10 Lood impact, unnotched 30°10'4 23°C 35 41 /m² 50 180 1/10 Lood impact, unnotched 30°10'4 23°C 35 40 40 10 50 180 1/10 Chart 23°C, Unnotch Edgew 80°10'4 39°C am 40 40 50 179 160 O°C, Unnotch Edgew 80°10'4 39°C am 40 40 50 179 160 Thermach.** **** 50 179 160 50 179 160 The MAR.** **** ASIM Discassion 174 180 50 179 160 The TO, 45 MPA, 64 mm, unannealed 21 5° ASIM Discassion 176 180 The TO, 45 MPA, 64 mm, unannealed 14°C 33 40° ASIM Discassion 176 180 The TO, 45 MPA, 64 mm, unannealed 14°C 33 40° ASIM Discassion 176 180 The TO, 180 MPA, 64 mm, unannealed 14°C 30 80 80 The TO, 180 MPA, 64 mm, unannealed 14°C 50 80 80 80 80 80 80 80 80 80 80 80	Izod Impact, notched, 23°C	112	J/m	ASTM D256
both Impact, unnotched 80°10°4 s23°C 35 M/m² 05 100 10 tood impact, unnotched 80°10°4 s3°C 35 M/m² 05 100 10 Charpy SCP Unnotch falgew 80°10°4 spe82mm 40 M/m² 05 107 1°10 30°C, Unnotch falgew 80°10°4 spe82mm 40 M/m² 05 107 1°10 TEREBML************************************	Izod Impact, Reverse Notched, 3.2 mm	480	J/m	ASTM D256
Icon Icon Icon Chary 30 Min/m 500 179 190 20°C, Unnoth Edgew 80°10°4 spe Gram 40 Min/m 500 179 190 20°C, Unnoth Edgew 80°10°4 spe Gram 40 Min/m 500 179 190 THERMARI*** "*** ASTM D1525 THE CARL *** 324 **** ASTM D1525 16T. 0.45 MPa, 6.4 mm, unannealed 212 **** ASTM D648 16T. 1.25 MPa, 6.4 mm, unannealed 212 **** ASTM D648 16T. 2.26°C to 150°C, flow 1.46°G 11°C 80 11359 CTE, 22°C to 150°C, flow 4.46°G 11°C 80 11359 CTE, 22°C to 150°C, flow 4.46°G 11°C 80 11359 CTE, 22°C to 150°C, flow 40 80 11359 20 CTE, 22°C to 150°C, flow 40 80 10359 20 CTE, 22°C to 150°C, flow 40 80 306 20 Veat Softening Temp, Rate Aly 50 22 20 80 30 80 Vicat Softening Temp, Rate Aly 12 25 40 80 5/3 ke	Izod Impact, unnotched, 23°C	427	J/m	ASTM D4812
Charpy Charpone bidgew 80°10°45 pe62mm 40 Mpm 50 179°10°10 30°C, Lumone bidgew 80°10°45 pe62mm 40 Mpm 50 179°10°10 30°C, Lumone bidgew 80°10°45 pe62mm 40 Mpm 50 179°10°10 THERMAL************************************	Izod Impact, unnotched 80*10*4 +23°C	35	kJ/m²	ISO 180/1U
23°C, Unnotch Edgew 80°10°4 sp=62mm 40 M/m² ISO 179/16U 30°C, Unnotch Edgew 80°10°4 sp=62mm 40 kJm² 1073/16U HEREMAL************************************	Izod Impact, unnotched 80*10*4 -30°C	35	kJ/m²	ISO 180/1U
30°C Unnote Edgew 80°10′4 spe8cm 40 kl/m² 50 (79) (19) THERMALI* V ASIM D155 HOT, 0.45 MPs, 6.4 mm, unannealed 23 °C ASIM D164 HOT, 1.52 MPs, 6.4 mm, unannealed 212 °C ASIM D648 CTC, 20°C to 150°C, flow 1.46°05 1/°C ASIM E831 CTE, 23°C to 150°C, flow 4.46°5 1/°C 80 1339-2 ELE, 23°C to 150°C, flow 4.60°5 1/°C 80 1339-2 ELE, 23°C to 150°C, flow 4.60°5 1/°C 80 1339-2 ELE, 23°C to 150°C, flow 4.60°5 1/°C 80 1339-2 ELE, 23°C to 150°C, flow 4.60°5 1/°C 80 1339-2 ELE, 23°C to 150°C, flow 4.60°C 80 306 ELE, 23°C to 150°C, flow 4.60°C 80 306 CE, 23°C to 150°C, flow 4.60°C 80 306 CE, 23°C to 150°C, flow 2.00°C 80 306 Vicas Oftening Temp, Rate B10°C 2.70°C 80 306 Vicas Oftening Temp, Rate B170 2.70°C 80 306 Relative Temp Index, Mech Wilmpact (**) <td>Charpy</td> <td></td> <td></td> <td></td>	Charpy			
THERMAL (**) THERMAL (**) C ASTM D1525 HDT, 0.458 MPa, 6.4 mm, unanneled 215 **C ASTM D648 HDT, 1.52 MPa, 6.4 mm, unanneled 212 **C ASTM D648 CTE, 2.20*Cto 150°C, flow 1.46.05 1/*C ASTM D648 CTE, 23*Cto 150°C, flow 1.46.05 1/*C SIO 8302 CTE, 23*Cto 150°C, flow 1.46.05 1/*C SIO 1339-2 CTE, 23*Cto 150°C, flow 4.56.05 1/*C SIO 1339-2 Ball Pressure Test. 129°C + 1-2°C 45.05 1/*C SIO 1339-2 Vicat Softening Temp, Rate 8/50 23 *C 160.306-10-2 Vicat Softening Temp, Rate 8/120 217 *C 150.306 Vicat Softening Temp, Rate 8/120 217 *C 150.306 MDT/Jee, 0.45MPs Edgew 120*10*4 sp=100mm 21 *C 150.75/Re Relative Temp Index, Mech w/o impact *** 10 7C 0.17468 *** 10 Relative Temp Index, Mech w/o impact *** 10 10 *C 0.17468 Water Absorption, (23*C/Saturated) 0.1 .3 <t< td=""><td>23°C, Unnotch Edgew 80*10*4 sp=62mm</td><td>40</td><td>kJ/m²</td><td>ISO 179/1eU</td></t<>	23°C, Unnotch Edgew 80*10*4 sp=62mm	40	kJ/m²	ISO 179/1eU
Vicat Softening Temp, Rate B/50 234 °C ASIM D1525 HDT, 1.4S MPa, 6.4 mm, unanneeled 212 °C ASIM D648 HDT, 1.82 MPa, 6.4 mm, unanneeled 212 °C ASIM D648 CTE, 20°Cto 150°C, flow 1.4F-05 1/°C ASIM E831 Thermal Conductivity 1.4F-05 1/°C 803 802 CTE, 23°Cto 150°C, flow 45-69 1/°C 801 1359-2 Ball Pressure Test, 125°C+/-2°C 905 1/°C 801 1359-2 Vicat Softening Temp, Rate B/50 27 °C 803 06 Vicat Softening Temp, Rate B/50 27 °C 80 306 Vicat Softening Temp, Rate B/50 27 °C 80 306 Vicat Softening Temp, Rate B/10 22 °C 80 306 HDT/Be, 0.4SMPs Edgew 120°10°4 sp=100mm 21 °C 80 75/Re HDT/Be, 1.8 MPs Edgew 120°10°4 sp=100mm 17 °C U.7 468 Relative Temp Index, Mech w/o impact ²⁰ 10 °C U.7 468 Relative Temp Index, Mech w/o impact ²⁰ 16 ASIM D792	-30°C, Unnotch Edgew 80*10*4 sp=62mm	40	kJ/m²	ISO 179/1eU
Vicat Softening Temp, Rate B/50 234 °C ASIM D1525 HDT, 1.4S MPa, 6.4 mm, unanneeled 212 °C ASIM D648 HDT, 1.82 MPa, 6.4 mm, unanneeled 212 °C ASIM D648 CTE, 20°Cto 150°C, flow 1.4F-05 1/°C ASIM E831 Thermal Conductivity 1.4F-05 1/°C 803 802 CTE, 23°Cto 150°C, flow 45-69 1/°C 801 1359-2 Ball Pressure Test, 125°C+/-2°C 905 1/°C 801 1359-2 Vicat Softening Temp, Rate B/50 27 °C 803 06 Vicat Softening Temp, Rate B/50 27 °C 80 306 Vicat Softening Temp, Rate B/50 27 °C 80 306 Vicat Softening Temp, Rate B/10 22 °C 80 306 HDT/Be, 0.4SMPs Edgew 120°10°4 sp=100mm 21 °C 80 75/Re HDT/Be, 1.8 MPs Edgew 120°10°4 sp=100mm 17 °C U.7 468 Relative Temp Index, Mech w/o impact ²⁰ 10 °C U.7 468 Relative Temp Index, Mech w/o impact ²⁰ 16 ASIM D792	THERMAL (1)			
HDT, 0.45 MPa, 6.4 mm, unannealed 215 °C ASTM D648 HDT, 1.82 MPa, 6.4 mm, unannealed 212 °C ASTM B648 CTE, 20°C to 150°C, flow 1.4605 1/°C ASTM B648 CTE, 23°C to 150°C, flow 1.4605 1/°C ISD 1359-2 CTE, 23°C to 150°C, flow 4.5605 1/°C ISD 1359-2 CTE, 23°C to 150°C, flow 4.5605 1/°C ISD 1359-2 CTE, 23°C to 150°C, flow 4.5605 1/°C ISD 1359-2 CTE, 23°C to 150°C, flow 4.5605 1/°C ISD 1359-2 CTE, 23°C to 150°C, flow 4.5605 1/°C ISD 1359-2 CTE, 23°C to 150°C, flow 4.5605 1/°C ISD 1359-2 CTE, 23°C to 150°C, flow 4.5605 1/°C ISD 305-6 CTE, 23°C to 150°C, flow 4.5605 1.6006		234	°C	ASTM D1525
CFE, 20°C to 150°C, flow 1.4E05 1/°C ASTM E831 Themal Conductivity 0.33 W/m°C 10 8302 CFE, 23°C to 150°C, flow 1.4E05 1/°C 150 1359-2 CFE, 23°C to 150°C, flow 45E05 1/°C 150 1359-2 Ball Pressure Test, 125°C+/-2°C 45E05 1°C 150 6069-102 Wicas Softening Temp, Rate A/50 230 °C 150 306 Vicas Softening Temp, Rate B/120 25 °C 150 306 HDT/Jea, 0.4SMPa Edgew 120°10°4 sp=100mm 215 °C 150 75/Be HDT/Jea, 1.8 MPa Edgew 120°10°4 sp=100mm 210 °C 150 75/Be Relative Temp Index, Mech yimpact ¹⁰ 170 °C U. 7468 Relative Temp Index, Mech yimpact ¹⁰ 170 °C U. 7468 Relative Temp Index, Mech yimpact ¹⁰ 161 2 ASTM D570 Water Absorption (23°C/24hrs) 16.1 2 ASTM D570 Water Absorption (23°C/24hrs) 2 3 ASTM D570 Molds Shrinkage, flow, 3.2 mm ¹³ 1.6 2 ASTM D52 <td></td> <td>215</td> <td>°C</td> <td>ASTM D648</td>		215	°C	ASTM D648
CTE, -20°C to 150°C, flow 1.465 1/°C ASTM E831 Thermal Conductivity 0.33 W/m°C 150 8302 CTE, 23°C to 150°C, flow 1.4605 1/°C 50 11359-2 CTE, 23°C to 150°C, vflow 45.695 1/°C 50 11359-2 Ball Pressure Test, 125°C+/-2°C MSSS 1°C 150 1359-2 Wicat Softening Temp, Rate A/50 230 °C 150 306 Vicat Softening Temp, Rate B/120 25 °C 150 306 HDT/Jea, 0.45MPa Edgew 120°10°4 sp=100mm 215 °C 150 75/Be HDT/Jea, 1.8 MPa Edgew 120°10°4 sp=100mm 210 °C 150 75/Be Relative Temp Index, Mech Jimpact ⁽²⁾ 170 °C U.7468 Relative Temp Index, Mech Jimpact ⁽²⁾ 170 °C U.7468 Relative Temp Index, Mech Jimpact ⁽²⁾ 161 2 ASTM D579 Relative Temp Index, Mech Jimpact ⁽²⁾ 1.61 2 ASTM D570 Water Absorption, (23°C/24hrs) 1.61 2 ASTM D570 Mater Absorption, (23°C/25sturated) 2 3 <			°C	
Fremat Conductivity 0.33 W/m²C IS 8302 CFE, 22°C to 150°C, flow 1,46.95 1/°C 50 11359-2 CFE, 22°C to 150°C, flow 1,46.95 1/°C 50 11359-2 CFE, 22°C to 150°C, flow 150 1359-2 150 1359-2 Ball Pressure Test, 125°C+/-2°C PASSE - 160 60699-10-2 Vicat Softening Temp, Rate A/50 230 °C 150 306 Vicat Softening Temp, Rate B/120 217 °C 150 306 Vicat Softening Temp, Rate B/120 215 °C 150 75/ke HDT/Jee, 1.84 MPa Edgew 120°10°4 sp=100mm 210 °C 150 75/ke Relative Temp Index, Mech Joinpact ⁽²⁾ 170 °C 10.746.8 Relative Temp Index, Mech W/ Impact ⁽²⁾ 170 °C 10.746.8 Relative Temp Index, Mech W/ Impact ⁽²⁾ 161 ≤ ASTM D792 Vester Absorption, (23°C/24trs) 1.61 ≤ ASTM D792 Vater Absorption, (23°C/25trusted) 2.0 3/10 ASTM D570 Vater Absorption, (23°C/25trusted) 1.0 3 SME Creati				
CTE, 23°C to 150°C, flow 1.4E05 1.9°C ISO 1359°2. CTE, 23°C to 150°C, xflow 4.5E05 1,°C ISO 1359°2. Ball Pressure Test, 125°C +/- 2°C PASSES - IEC 60695-102 Vicat Softening Temp, Rate A/50 217 °C ISO 306 Vicat Softening Temp, Rate B/120 225 °C ISO 306 HDT/Be, 0.45MPa Edgew 120°10°4 sp=100mm 210 °C ISO 75/Re HDT/Be, 1.8 MPa Edgew 120°10°4 sp=100mm 170 °C U.746B Relative Temp Index, Rice (2° 170 °C U.746B Relative Temp Index, Mech w/impact (2°) 170 °C U.746B Relative Temp Index, Mech w/impact (2°) 170 °C U.746B Relative Temp Index, Mech w/impact (2°) 170 °C U.746B Water Absorption, (23°C/24hrs) 1.61 S ASTM D792 Water Absorption, (23°C/24hrs) 2.2 ASTM D57 Water Absorption, (23°C/25hrs (25 ft St 2.2 ASTM D57 Mold Shrinkage on Tensile Bar, flow (3) 1.61 S SBIC method			•	
CTE, 23°C to 150°C, xflow 4.5E05 1,°C SOS 1359-2 Ball Pressure Test, 125°C + /- 2°C PASSES - EC 6095-10-2 Vicat Softening Temp, Rate A/50 230 °C SO 306 Vicat Softening Temp, Rate B/120 225 °C SO 306 HDT/Be, 0.45MPa Edgew 120°10°4 sp=100mm 215 °C SO 75/Be HDT/Be, 0.45MPa Edgew 120°10°4 sp=100mm 210 °C U.746B Relative Temp Index, Elec P³ 170 °C U.746B Relative Temp Index, Mech w/Impact (²) 170 °C U.746B Relative Temp Index, Mech w/Impact (²) 170 °C U.746B Relative Temp Index, Mech w/Impact (²) 170 °C U.746B Relative Temp Index, Mech w/Impact (²) 170 °C U.746B Water Absorption (23°C/24hrs) 10.1 2 SMT D57Q Water Absorption (23°C/24hrs) 2 ASTM D57Q Molet Shrinkage, flow, 3.2 mm (²) 2 ASIM D57Q Molet Shrinkage, flow, 3.2 mm (²) 2 ASIM D15Q Water Absorption (23°C/2	· · · · · · · · · · · · · · · · · · ·		,	
Vicat Softening Temp, Rate A/50 230 °C ISO 306 Vicat Softening Temp, Rate B/50 217 °C ISO 306 Vicat Softening Temp, Rate B/120 225 °C ISO 306 HDT/Be, 0.45MPa Edgew 120*10⁴4 sp=100mm 210 °C ISO 75/Be Relative Temp Index, Elec ⁽³⁾ 170 °C U.746B Relative Temp Index, Mech w/Impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/Impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/Impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/Impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/Impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/Impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/Impact ⁽²⁾ 170 °C W.1746B Relative Temp Index, Mech w/Impact ⁽²⁾ 170 °C ASTM D79 Water Absorption (23*°C/Saturated) 0.1 3 ASTM D123 Mold Shrinkage on Tensile Bar, flow ⁽³⁾ 0.1 <td>CTE, 23°C to 150°C, xflow</td> <td>4.5E-05</td> <td></td> <td>ISO 11359-2</td>	CTE, 23°C to 150°C, xflow	4.5E-05		ISO 11359-2
Vicat Softening Temp. Rate B/50 217 °C ISO 306 Vicat Softening Temp. Rate B/120 225 °C ISO 306 HDT/Be, 0.45MPa Edgew 120°10°4 sp=100mm 215 °C ISO 75/Be HDT/Ae, 1.5 MPa Edgew 120°10°4 sp=100mm 210 °C ISO 75/Je Relative Temp Index, Elec ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/ impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/ jo impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/ jo impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/ jo impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/ jo impact ⁽²⁾ 170 °C U.746B Relative Temp Index, Mech w/ jo impact ⁽²⁾ 120 °C U.746B PMSICAL ************************************		PASSES		IEC 60695-10-2
Vicat Softening Temp, Rate B/120 225 °C ISO 306 HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm 215 °C ISO 75/Be HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm 210 °C ISO 75/Ae Relative Temp Index, Elec ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C ASTM DSTQ Water Absorption, (23°C/Saturated) 1.61 2.0 ASTM DSTQ Melet How Rate, 33°C/Saturated) 0.1-0.3 % ASTM DSTQ Mold Shrinkage, flow, 3.2 mm ⁽³⁾ 0.1-0.3 % ASIM Cleative Hotel Possibity 0.8 % SASIC method Water Absorption (23°C/Saturated) 0.8	Vicat Softening Temp, Rate A/50	230	°C	ISO 306
Vicat Softening Temp, Rate B/120 225 °C ISO 306 HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm 215 °C ISO 75/Be HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm 210 °C ISO 75/Ae Relative Temp Index, Blec ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C ASTM DSTQ Water Absorption, (23°C/Saturated) 0.1 3 ASTM D570 Melt Flow Rate, 337°C/6.6 kgf 4.2 9/10 min ASTM D128 Mold Shrinkage, flow, 3.2 mm ⁽³⁾ 0.1 - 0.3 \$ ASIM DER Mold Shrinkage on Tensile Bar, flow ⁽³⁾ 0.2 (2 ASIM DER Water Absorption, (23°C/Saturated)		217	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm 215 °C ISO 75/Be HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm 210 °C ISO 75/Ae Relative Temp Index, Elec ⁽²⁾ 170 °C UL 746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL 746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL 746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL 746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL 746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL 746B Relative Temp Index, Mech w/impact ⁽²⁾ 170 °C UL 746B Physical ⁽²⁾ 181 181 Sec Temp Index Mech w/Impact Mech w/Im		225	°C	ISO 306
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm 210 °C ISO 75/Ae Relative Temp Index, Elec (²) 170 °C Ut. 746B Relative Temp Index, Mech w/impact (²) 170 °C Ut. 746B Relative Temp Index, Mech w/o impact (²) 170 °C Ut. 746B PHYSICAL (¹) " SEC ASTM D792 Specific Gravity 1.61 . ASTM D792 Water Absorption, (23°C/Saturated) 0.9 % ASTM D570 Melt Flow Rate, 337°C/6.6 kgf 4.2 John Minima ASTM D570 Mold Shrinkage, flow, 3.2 mm (³) 0.1-0.3 % ASBIC method Mold Shrinkage on Tensile Bar, flow (³) 0.1-0.3 % ASBIC method Water Absorption, (23°C/Saturated) 0.8 % SOG-2-1 Moisture Absorption (23°C/Sox RH) 0.4 % SOG-2-1 Melt Volume Rate, MVR at 360°C/So kg 5 cm³/10 min SOI 133 ELECTRICAL (¹) W/m ASTM D257 Volume Rate, MVR at 360°C/So kg 1.5E+16 Cm² ASTM D150		215	°C	ISO 75/Be
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Comparative Tracking Index (UL) {PLC} (2) 5 PLC Code UL 746A				
Hot-Wire Ignition (HWI), PLC 0 1-7 ≥1.5 mm UL 746A				
	Hot-Wire Ignition (HWI), PLC 0 1-1	≥1.5	mm	UL 746A



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
High Amp Arc Ignition (HAI), PLC 4 ⁽²⁾	≥1.5	mm	UL 746A
High Voltage Arc Track Rate {PLC} (2)	4	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	5	PLC Code	ASTM D495
Volume Resistivity	1.E+15	$\Omega.$ cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	IEC 60093
Dielectric Strength, in oil, 0.8 mm	35	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	3.1	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.0025	-	IEC 60250
Dissipation Factor, 1 MHz	0.0019	-	IEC 60250
Comparative Tracking Index	150	V	IEC 60112
Comparative Tracking Index, M	100	V	IEC 60112
Relative Permittivity, 50/60 Hz	3.5	-	IEC 60250
FLAME CHARACTERISTICS (2)			
UL Yellow Card Link	E121562-221103	-	-
UL Yellow Card Link 2	E45587-236985	-	
UL Recognized, 94V-0 Flame Class Rating	≥0.25	mm	UL 94
Glow Wire Ignitability Temperature, 1.5 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	960	°C	IEC 60695-2-12
Oxygen Index (LOI) ⁽¹⁾	54	%	ASTM D2863
NBS Smoke Density, Flaming, Ds 4 min ⁽¹⁾	1	-	ASTM E662
Oxygen Index (LOI) ⁽¹⁾	48	%	ISO 4589
INJECTION MOLDING (4)			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	350 – 400	°C	
Nozzle Temperature	345 – 400	°C	
Front - Zone 3 Temperature	345 – 400	°C	
Middle - Zone 2 Temperature	340 – 400	°C	
Rear - Zone 1 Temperature	330 – 400	°C	
Mold Temperature	135 – 165	°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	



- (1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.
- (2) 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.
- (3) 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.
- (4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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