

Product Texts

Partially aromatic, glassfiber reinforced polyphthalamide for injection molding with strong mechanical properties especially at elevated temperatures, good long-term thermal stability and outstanding chemical resistance for highly stressed parts. Ultramid® Advanced N4HG7 LS BK 23593 can be characterized as compound with high toughness, stiffness, extremely low water absorption and outstanding dimensional stability. It is based on a high molecular weight polymer, and features exceptional resistance against many challenging media such as automotive coolant fluids. Ultramid® Advanced N4HG7 LS BK 23593 is easily processable with excellent melt stability.

Markets & applications

Automotive: Fuel system, cooling system, powertrain, Auto E&E, sensors, pumps, fuel cell

E&E: Connectors

Consumer goods: Home appliances, consumer electronics

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
^[C] Molding shrinkage, parallel	0.5 / *	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	0.9 / *	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	11500 / 11500	MPa	ISO 527
^[C] Stress at break	210 / 190	MPa	ISO 527
^[C] Strain at break	2.5 / 2.3	%	ISO 527
Flexural modulus, 23°C	10500 / 10500	MPa	ISO 178
Flexural strength	290 / 265	MPa	ISO 178
^[C] Charpy impact strength, +23°C	90 / 70	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	80 / -	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	10 / 8	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	9 / -	kJ/m ²	ISO 179/1eA

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Melting temperature, 10°C/min	300 / *	°C	ISO 11357-1/-3
^[C] Glass transition temperature, 10°C/min	120 / *	°C	ISO 11357-1/-2
^[C] Temp. of deflection under load, 1.80 MPa	270 / *	°C	ISO 75-1/-2
^[C] Coeff. of linear therm. expansion, parallel	17.5 / *	E-6/K	ISO 11359-1/-2
^[C] Coeff. of linear therm. expansion, normal	56.5 / *	E-6/K	ISO 11359-1/-2
^[C] Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	mm	-

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Relative permittivity, 100Hz	3.8 / 3.8	-	IEC 62631-2-1
^[C] Dissipation factor, 1MHz	130 / 195	E-4	IEC 62631-2-1
Volume resistivity	1E16 / 1E14	Ohm*m	IEC 62631-3-1
Surface resistivity	* / 1E14	Ohm	IEC 62631-3-2
^[C] Comparative tracking index	- / 600	-	IEC 60112

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
^[C] Water absorption	1.9 / *	%	Sim. to ISO 62
^[C] Humidity absorption	0.8 / *	%	Sim. to ISO 62
^[C] Density	1420 / -	kg/m ³	ISO 1183
Bulk density	700	kg/m ³	-

[C]: CAMPUS

Material specific properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Viscosity number	120 / *	cm³/g	ISO 307, 1157, 1628

[C]: CAMPUS

Test specimen production	Value	Unit	Test Standard
ISO Data			
^[C] Injection Molding, melt temperature	330	°C	ISO 294
Injection Molding, mold temperature	140	°C	ISO 294

[C]: CAMPUS

Characteristics

Processing

Injection Molding, Other Extrusion

Delivery form

Pellets, Black

Special Characteristics

Heat stabilized or stable to heat

Features

Melt Strength, Thermal Stability

Chemical Resistance

General Chemical Resistance

Applications

Automotive, Electrical and Electronical

Regional Availability

North America, Europe, Asia Pacific, South and Central America, Near East/Africa

Other text information

Injection molding

PREPROCESSING

Pre/Post-processing, max. allowed water content: .05 %

Pre/Post-processing, Pre-drying, Temperature: 120 °C

Pre/Post-processing, Pre-drying, Time: 8 h

PROCESSING

injection molding, Melt temperature, range: 320 - 340 °C

injection molding, Melt temperature, recommended: 330 °C

injection molding, Mold temperature, range: 125 - 170 °C

injection molding, Mold temperature, recommended: 140 °C

injection molding, Dwell time, thermoplastics: 5 min