

Product Information

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Ultramid® 8253 HS **Polyamide 6**


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Product Description

This resin is a heat stabilized, impact modified type 6 graft copolymer developed for both injection molding and extrusion applications requiring improved dry as molded toughness and increased flexibility. It is also available in non-heat stabilized (Ultramid 8253) and/or pigmented versions.

Applications

Ultramid 8253 HS is generally recommended for applications such as plugs, receptacles, flexible connector covers, weed trimmer components, clips, fasteners, flanges, key housings as well as many flexible tubing applications.

PHYSICAL	ASTM Test Method	Property Value	
Specific Gravity	D-792	1.09	
Mold Shrinkage (1/8" bar, in/in)		0.012	
Moisture, %	D-570		
(24 Hour)		1.5	
(50% RH)		2.3	
(Saturation)		8.1	
MECHANICAL	ASTM Test Method	Dry	Conditioned
Tensile Strength, Yield, MPa (psi)	D-638		
-40°C (-40°F)		117 (17,000)	116 (16,800)
23°C (73°F)		65 (9,430)	32 (4,640)
80°C (176°F)		25 (3,620)	20 (2,900)
121°C (250°F)		20 (2,900)	-
Tensile Strength, Break, MPa (psi)	D-638		
-40°C (-40°F)		100 (14,500)	70 (10,200)
23°C (73°F)		60 (8,700)	-
Elongation, Yield, %	D-638		
-40°C (-40°F)		7	-
23°C (73°F)		4	15
80°C (176°F)		29	-
121°C (250°F)		34	30
Elongation, Break, %	D-638		
-40°C (-40°F)		9	20
23°C (73°F)		>100	>100
Flexural Modulus, MPa (psi)	D-790		
-40°C (-40°F)		3,050 (442,000)	3,150 (457,000)
23°C (73°F)		2,210 (320,000)	670 (97,200)
65°C (149°F)		415 (60,200)	-
90°C (194°F)		325 (47,100)	-
121°C (250°F)		260 (37,700)	-
Flexural Strength, MPa (psi)	D-790		
-40°C (-40°F)		148 (21,500)	141 (20,400)
23°C (73°F)		87 (12,600)	32 (4,640)
65°C (149°F)		25 (3,620)	-
90°C (194°F)		20 (2,900)	-
121°C (250°F)		14 (2,030)	-
Rockwell Hardness, R Scale	D-785	82	-
IMPACT	ASTM Test Method	Dry	Conditioned
Notched Izod Impact, J/M (ft-lbs/in)	D-256		
-40°C (-40°F)		80 (1.5)	64 (1.2)
23°C (73°F)		148 (2.8)	NB
Drop Weight Impact, ft-lbs, 23°C	BASF Drop Weight Impact Test	200	>200
THERMAL	ASTM Test Method	Dry	Conditioned
Melting Point, °C(°F)	D-3418	220 (428)	-
Heat Deflection @ 264 psi (1.8 MPa) °C(°F)	D-648	60 (140)	-
Heat Deflection @ 66 psi (.45 MPa) °C(°F)	D-648	168 (334)	-
Coef. of Linear Thermal Expansion, mm/mm °C (in/in °F)	E-831	0.99 X10-4	-
UL RATINGS	UL Test Method	Property Value	
Relative Temperature Index, .71mm	UL746B		
Mechanical w/o Impact, °C		95	
Mechanical w/ Impact, °C		95	
Electrical, °C		105	
Flammability Rating, .75mm	UL94	HB	
Relative Temperature Index, .75mm	UL746B		
Mechanical w/o Impact, °C		95	
Mechanical w/ Impact, °C		95	

Electrical, °C		105	
Flammability Rating, 1.5mm	UL94	HB	
Relative Temperature Index, 1.5mm	UL746B		
Mechanical w/o Impact, °C		105	
Mechanical w/ Impact, °C		105	
Electrical, °C		105	
Flammability Rating, 3.0mm	UL94	HB	
Relative Temperature Index, 3.0mm	UL746B		
Mechanical w/o Impact, °C		105	
Mechanical w/ Impact, °C		105	
Electrical, °C		105	
Flammability Rating, 6.0mm	UL94	HB	
Relative Temperature Index, 6.0mm	UL746B		
Mechanical w/o Impact, °C		105	
Mechanical w/ Impact, °C		105	
Electrical, °C		105	
ELECTRICAL	ASTM Test Method	Dry	Conditioned
Volume Resistivity, 1.5 mm	D-257	>1E13	-

Processing Guidelines

Material Handling

Max. Water content: 0.2%

Product is supplied in sealed containers and drying prior to molding is not required. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 80°C (176°F) is recommended. Drying time is dependent on moisture level, however 2-4 hours is generally sufficient. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile

Melt Temperature 240-270°C (464-518°F)

Mold Temperature 60-85°C (140-185°F)

Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures

A mold temperature of 60-85°C (140-185°F) is recommended, however temperatures of as low as 10°C (50°F) can be used where applicable.

Pressures

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Fill Rate

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing.

Note

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