

Ultramid® 8253

Polyamide 6



Product Description

Ultramid 8253 is an unreinforced, impact modified type 6 graft copolymer developed for both injection molding and extrusion applications. It is also available in heat stabilized (Ultramid 8253 HS) and/or pigmented versions. Copolymerization results in improved dry as molded toughness and increased flexibility to meet higher impact performance compared to conventional unreinforced homopolymers. Good nylon thermal and chemical properties are maintained along with good strength and stiffness retention.

Applications

Ultramid 8253 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		
-40C (-40F)		117 (17,000)	116 (16,800)
23C (73F)		65 (9,430)	32 (4,640)
80C (176F)		25 (3,620)	20 (2,900)
121C (250F)		20 (2,900)	-
Tensile Strength, Break, MPa (psi)	D-638		
-40C (-40F)		100 (14,500)	70 (10,200)
23C (73F)		60 (8,700)	-
Elongation, Yield, %	D-638		
-40C (-40F)		7	-
23C (73F)		4	15
80C (176F)		29	-
121C (250F)		34	30
Elongation, Break, %	D-638		
-40C (-40F)		9	20
23C (73F)		>100	>100
Flexural Modulus, MPa (psi)	D-790		
-40C (-40F)		3,050 (442,000)	3,150 (457,000)
23C (73F)		2,210 (320,000)	670 (97,200)
65C (149F)		415 (60,200)	-
90C (194F)		325 (47,100)	-
121C (250F)		260 (37,700)	-
Flexural Strength, MPa (psi)	D-790		



-40C (-40F)		148 (21,500)	141 (20,400)
23C (73F)		87 (12,600)	32 (4,640)
65C (149F)		25 (3,620)	-
90C (194F)		20 (2,900)	-
121C (250F)		14 (2,030)	-
Rockwell Hardness, R Scale	D-785	82	-
IMPACT		ASTM Test Method	
Notched Izod Impact, J/M (ft-lbs/in)		D-256	
-40C (-40F)		80 (1.5)	64 (1.2)
23C (73F)		148 (2.8)	NB
Drop Weight Impact, ft-lbs, 23C	BASF Drop Weight Impact Test	200	-
THERMAL		ASTM Test Method	
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
Flammability Rating, 1.5mm	UL94		HB
Relative Temperature Index, 1.5mm	UL746B		
Mechanical w/o Impact, C			85
Mechanical w/ Impact, C			75
Electrical, C			105
ELECTRICAL		ASTM Test Method	
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 degC (176 degF) is recommended. Drying time is dependent on moisture level, but 2-4 hours is generally sufficient. Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile

Melt Temperature 240-270 degC (464-518 degF)

Mold Temperature 60-85 degC (140-185 degF)

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

Mold Temperatures

A mold temperature of 60-85 degC (140-185 degF) is recommended, but temperatures of as low as 10 degC (50 degF) 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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