Product Information
Oct 2016

Ultramid[®] 8350 HS Polyamide 6



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Product Description

Ultramid 8350 HS is a heat stabilized, impact modified type 6 graft copolymer developed for extrusion, tubing, and jacketing applications requiring a high level of toughness combined with a moderate level of flexibility. It is also available in non-heat stabilized (Ultramid 8350) and/or pigmented versions.

Applications

Ultramid 8350 HS is generally recommended for applications such as automotive vacuum tubing, cable jacketing, and high pressure and hydraulic hoses.

Moled Shrinkage (1/8" bar, in/in) D-570 (24 Hour) 1.1 (50% RH) 1.9 (Saturation) 6.7 MECHANICAL ASTM Test Method Dry Conditioned Fensile Strength, Yield, MPa (psi) D-638 53 (7,680) 95 (13,800) 23°C (73°F) 85 (12,300) 95 (13,800) 23°C (40°F) 20 (2,900) - 121°C (250°F) 14 (2,030) - - Elongation, Yield, % D-638 - 40°C (-40°F) 8 - 23°C (73°F) 8 - 23°C (73°F) 5 9 80°C (176°F) 37 - 23°C (73°F) 37 - 80°C (176°F) 37 - 121°C (250°F) 27 -	PHYSICAL	ASTM Test Method	Propert	Property Value	
	Specific Gravity	D-792			
1.1	Mold Shrinkage (1/8" bar, in/in)		0.0	14	
COPUS NET 19 19 19 19 19 19 19 1	Moisture, %	D-570			
Saturation	(24 Hour)		1.	1	
	(50% RH)		1.9		
Paralle Strength, Yield, MPa (psa)	(Saturation)		6.7		
40°C (-40°F)	MECHANICAL	ASTM Test Method	Dry	Conditioned	
23°C (73°F)	Tensile Strength, Yield, MPa (psi)	D-638			
BO'C (178'F)	-40°C (-40°F)		85 (12,300)	95 (13,800)	
121°C (250°F) D-638	23°C (73°F)		53 (7,680)	32 (4,640)	
	80°C (176°F)		20 (2,900)	-	
40°C (47F)	121°C (250°F)		14 (2,030)	-	
30°C (178°F) 5 9 170°C (250°F) 27 - 1 12°C (250°F) 270°C 25°C (278°F) 25°C (278°F) 25°C (278°F) 25°C (278°F) 25°C (289°C) 25°C (280°C) 25	Elongation, Yield, %	D-638			
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121°C (280°F) Post	23°C (73°F)		5	9	
Designation, Break, % Designation Desi	80°C (176°F)		37	-	
23°C (73°F) >100	121°C (250°F)		27	-	
23°C (73°F) 5-100	Elongation, Break, %	D-638			
Part			>100	>100	
-40°C (-40°F)		D-790			
23°C (73°F)			2,300 (334,000)	2,760 (400,000)	
65°C (149°F) 270 (39.200) - 90°C (194°F) 210 (30.400) - 121°C (250°F) 165 (23.900) -			·		
90°C (194°F)					
121°C (250°F)			·	-	
Part	. ,			-	
-40°C (-40°F)	` '	D-790	(20,000)		
23°C (73°F)			120 (17 400)	120 (17 400)	
65°C (149°F) 20 (2,900) - 90°C (194°F) 10 (1,450) - 10 (1,450) - 1121°C (250°F) 10 (1,450) - Nockwell Hardness, R Scale D-785 78 - NPACT ASTM Test Method Dry Conditioned Notched Izod Impact, J/M (ft-lbs/in) D-256 190 (3.6) 155 (2.9) 23°C (73°F) NB NB NB NB NB NB NB NB			·	·	
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121°C (250°F)				<u>-</u>	
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/olume Resistivity, 1.5 mm D-257 >1E13 -			<u> </u>	Conditioned	
	volume Resistivity, 1.5 mm	D-25 <i>1</i>	>1E13	-	

Processing Guidelines

Material Handling

Max. Water content: 0.1%

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 240-250°C (464-482°F)

Typical Barrel Profile (°C):

Rear 245-260°C (473-500°F) Middle 240-255°C (464-491°F) Front 240-250°C (464-482°F)

Head 225-245°C (437-473°F) Flange 225-240°C (437-464°F) Die 225-240°C (437-464°F)

Screw Parameters

Metering Section	40%
Transition Section	6 to 7 flights
Feed Section	balance of screw length
Compression Ratio	3.5:1 to 4.0:1
L/D Ratio	20:1 to 24:1

Tooling & Sizing

Die to Finished Tube dia. 1.5-2.0:1

Selection of pin and die size will be dependent on the material viscosity. In general, the ratio of die size to finished tube diameter is about 1.5-2.0:1. The mandrel (pin) size is determined the same way in relation to the inner tube diameter.

Free (open tank) extrusion is recommended when producing tube diameters 1 cm and below. For larger diameters, a differential pressure vacuum tank is recommended.

Tooling draw ratio is generally higher with free extrusion versus sizing, however will depend on melt viscosity. The vacuum sizer entrance should be about 3-9% larger than the finished tube outer diameter. Selection will depend on melt viscosity and die swell of the extrudate.

Quenching

For diameters less than or equal to 1 cm (.39") O.D., open tank quenching with normal tap water is suggested. Depending upon line speed, quenching distance can vary from 7.5 to 12 meters (24.6-39.4 feet). A short air gap (die to quench water) is recommended for both tubing and cable jacketing for best flexibility.

Note

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