

Ultramid® HPN 9350 HS

Polyamide 6

BASF Corporation

Message:

Ultramid HPN 9350 HS is a flexible, heat stabilized, impact modified PA6 extrusion grade resin. It possesses a balance of performance properties such as good flexibility, toughness and abrasion resistance. The addition of heat stabilizer system extends its retention of properties at elevated temperatures. Chemical resistance is excellent to greases, oils, and hydrocarbons.

Applications

Ultramid HPN 9350 HS is generally recommended for applications such as automotive under hood tubing, windshield washer tubing, cable jacketing, and other tubing.

General Information				
Additive		Impact modifier		
		heat stabilizer		
Features		Impact modification		
		Good flexibility		
		Good wear resistance		
		Good chemical resistance		
		Hydrocarbon resistance		
		Oil resistance		
		Grease resistance		
		Thermal Stability		
		Good toughness		
Uses		Cable sheath		
		Pipe fittings		
		Parts under the hood of a car		
Agency Ratings		EC 1907/2006 (REACH)		
RoHS Compliance		RoHS compliance		
Forms		Particle		
Processing Method		Extrusion		
Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity	1.06	--	g/cm ³	ASTM D792, ISO 1183
Molding Shrinkage - Flow (3.18 mm)	1.3	--	%	
Water Absorption				
Saturation	6.8	--	%	ASTM D570
Saturated, 23°C	6.8	--	%	ISO 62
Balance, 50% RH	1.9	--	%	ASTM D570

Equilibrium, 23°C, 50% RH	1.9	--	%	ISO 62
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness (R-Scale)	80	--		ASTM D785
Ball Indentation Hardness	70.0	--	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (23°C)	1700	--	MPa	ISO 527-2
Tensile Strength				
Yield, 23°C	50.0	--	MPa	ASTM D638
Yield, 23°C	45.0	--	MPa	ISO 527-2
Tensile Elongation				
Yield, 23°C	5.0	--	%	ASTM D638
Yield, 23°C	4.5	--	%	ISO 527-2
Fracture, 23°C	> 100	--	%	ASTM D638
Nominal Tensile Strain at Break (23°C)	> 50	--	%	ISO 527-2
Flexural Modulus				
-40°C	2280	--	MPa	ASTM D790
23°C	1730	520	MPa	ASTM D790
65°C	375	315	MPa	ASTM D790
90°C	220	240	MPa	ASTM D790
121°C	190	210	MPa	ASTM D790
23°C	1450	--	MPa	ISO 178
Flexural Strength				
-40°C	105	120	MPa	ASTM D790
23°C	69.0	25.0	MPa	ASTM D790
65°C	15.0	15.0	MPa	ASTM D790
90°C	10.0	10.0	MPa	ASTM D790
121°C	9.50	10.0	MPa	ASTM D790
23°C	50.0	--	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-30°C	9.0	--	kJ/m ²	ISO 179
23°C	40	--	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength (23°C)	No Break	--		ISO 179
Notched Izod Impact (23°C)	590	--	J/m	ASTM D256
Drop Impact Resistance (23°C)	190	--	J	Internal method
Flange temperature	225 - 240		°C	
Head Temperature	225 - 245		°C	

Extruder Screw L/D Ratio	20.0:1.0 to 24.0:1.0			
Extruder Screw Compression Ratio	3.5:1.0 to 4.0:1.0			
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
1.8 MPa, not annealed	55.0	--	°C	ASTM D648
1.8 MPa, not annealed	50.0	--	°C	ISO 75-2/A
Peak Melting Temperature	220	--	°C	ASTM D3418, ISO 3146
Extrusion	Dry	Unit		
Drying Temperature	80.0	°C		
Drying Time	2.0 - 4.0			hr
Suggested Max Moisture	0.10	%		
Cylinder Zone 1 Temp.	245 - 260		°C	
Cylinder Zone 3 Temp.	240 - 255		°C	
Cylinder Zone 5 Temp.	240 - 250		°C	
Melt Temperature	240 - 250		°C	
Die Temperature	225 - 240		°C	
Extrusion instructions				
Screw Parameters				
Metering Section : 40%				
Transition Section : 6 to 7 flights				
Feed Section : balance of screw length				

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