

Ultramid® 8350 HS

Polyamide 6

BASF Corporation



Prospector

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.

General

Material Status	• Commercial: Active		
Availability	• North America		
Additive	• Heat Stabilizer • Impact Modifier		
Features	• Copolymer • Good Abrasion Resistance • Good Chemical Resistance • Good Dimensional Stability • Good Flexibility	• Good Flow • Good Processability • Good Stiffness • Good Thermal Aging Resistance • Good Toughness	• Heat Stabilized • High Impact Resistance • Impact Modified • Low Viscosity • Semi Crystalline
Uses	• Automotive Applications • Hydraulic Applications	• Tubing • Wire Jacketing	
Agency Ratings	• ULC Unspecified Rating		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	<ul style="list-style-type: none"> • ASTM D4000 PA0220 B39310 • ASTM D4066 PA0283 PM400 • ASTM D4066 PA261 B29510 UB005 • ASTM D4066 PA261 B29510 UB005 AA002 • ASTM D4066 PA263 • CHEVROLET CMP NY064 XB • CHEVROLET CMP NY107 AA • CHRYSLER MS-DB41 CPN2248 Color: Color As Noted On Drawing • CHRYSLER MS-DB444, AM5092 • CHRYSLER MS-DB453 • DELPHI MS 7049 Color: Natural • FORD ESB-M4D426-A • FORD ESF-M4D364-A Color: Natural • FORD ESF-M4D426-A Color: Natural • GM GM7001M • GM GMP.PA6.016 Color: Natural • GM GMP.PA6.016 Color: BK-133 • GM-Delco M-4269 • SIEMENS MPS2124 • VOLKSWAGEN TL VW-534 Color: Natural 		
Appearance	• Colors Available	• Natural Color	• White
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	• Profile Extrusion
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1)	• Secant Modulus vs. Strain (ISO 11403-1)	• Shear Modulus vs. Temperature (ISO 11403-2)

Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity				
--	1.07	--	(g/cm ³)	ASTM D792
--	0.0387 (1070)	--	lb/in ³ (kg/m ³)	ISO 1183 ²
Molding Shrinkage - Flow (0.125 in (3.18 mm))	0.014 (1.4)	--	in/in (%)	ASTM D955
Water Absorption				
24 hr	1.1	--	%	ASTM D570
73°F (23°C), 24 hr	1.1	--	%	ISO 62
Saturation	6.7	--	%	ASTM D570 ISO 62 ²
Equilibrium, 50% RH	1.9	--	%	ASTM D570
Equilibrium	1.9	--	%	ISO 62 ²

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
-40°F (-40°C)	312000	--	psi	ISO 527-2

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Wednesday, January 26, 2011

Mechanical	Dry	Conditioned	Unit	Test Method
	(2150)		(MPa)	
176°F (80°C)	30500 (210)	--	psi (MPa)	ISO 527-2
250°F (121°C)	21800 (150)	--	psi (MPa)	ISO 527-2
--	261000 (1800)	97900 (675)	psi (MPa)	ISO 527-2 ²
Tensile Strength				
Yield, -40°F (-40°C)	12300 (85.0)	13800 (95.0)	psi (MPa)	ASTM D638 ISO 527-2
Yield, 73°F (23°C)	7690 (53.0)	4640 (32.0)	psi (MPa)	ASTM D638
Yield, 176°F (80°C)	2900 (20.0)	--	psi (MPa)	ASTM D638 ISO 527-2
Yield, 250°F (121°C)	2030 (14.0)	--	psi (MPa)	ASTM D638 ISO 527-2
Yield	7690 (53.0)	4640 (32.0)	psi (MPa)	ISO 527-2 ²
Tensile Elongation				
Yield, -40°F (-40°C)	8.0	--	%	ASTM D638
Yield, 73°F (23°C)	5.0	9.0	%	ASTM D638
Yield, 176°F (80°C)	37	--	%	ASTM D638
Yield, 250°F (121°C)	27	--	%	ASTM D638
Yield	5.0	9.0	%	ISO 527-2 ²
Break, 73°F (23°C)	> 100	> 100	%	ASTM D638
Nominal strain at break	> 50	> 50	%	ISO 527-2 ²
Flexural Modulus				
-40°F (-40°C)	334000 (2300)	400000 (2760)	psi (MPa)	ASTM D790
73°F (23°C)	261000 (1800)	89900 (620)	psi (MPa)	ASTM D790
149°F (65°C)	39200 (270)	--	psi (MPa)	ASTM D790
194°F (90°C)	30500 (210)	--	psi (MPa)	ASTM D790
250°F (121°C)	23900 (165)	--	psi (MPa)	ASTM D790
73°F (23°C)	254000 (1750)	--	psi (MPa)	ISO 178
Flexural Strength				
-40°F (-40°C)	17400 (120)	17400 (120)	psi (MPa)	ASTM D790
73°F (23°C)	9430 (65.0)	4350 (30.0)	psi (MPa)	ASTM D790
149°F (65°C)	2900 (20.0)	--	psi (MPa)	ASTM D790
194°F (90°C)	1450 (10.0)	--	psi (MPa)	ASTM D790
250°F (121°C)	1450 (10.0)	--	psi (MPa)	ASTM D790
73°F (23°C)	7250 (50.0)	--	psi (MPa)	ISO 178

Impact	Dry	Conditioned	Unit	Test Method
Charpy notched impact strength				ISO 179/1eA ²
-22°F (-30°C)	7.14 (15.0)	--	ft·lb/in ² (kJ/m ²)	
73°F (23°C)	47.6 (100)	--	ft·lb/in ² (kJ/m ²)	
Charpy Unnotched Impact Strength				ISO 179
73°F (23°C)	No Break	--		
Notched Izod Impact				ASTM D256
-40°F (-40°C)	3.6 (190)	2.9 (160)	ft·lb/in (J/m)	
73°F (23°C)	No Break	No Break		
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness (R-Scale)	78	--		ASTM D785
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
66 psi (0.45 MPa), Unannealed	293 (145)	--	°F (°C)	ASTM D648
264 psi (1.8 MPa), Unannealed	133 (56.0)	--	°F (°C)	ASTM D648
264 psi (1.8 MPa)	124 (51.0)	--	°F (°C)	ISO 75-2 ²
Melting Temperature	428 (220)	--	°F (°C)	ASTM D3418 ISO 3146
CLTE - Flow	0.000059 (0.00011)	--	in/in/°F (cm/cm/°C)	ASTM E831
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity				
0.0591 in (1.50 mm)	> 1.0E+13	--	ohm·cm	ASTM D257
--	> 3.9E+12 (> 1.0E+11)	--	ohm·in (ohm·m)	IEC 60093 ²
Comparative tracking index	600	--		IEC 60112 ²
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating - UL (0.0591 in (1.50 mm))	HB	--		UL 94
UL 746	Dry	Conditioned	Unit	Test Method
RTI Str (0.0591 in (1.50 mm))	149 (65.0)	--	°F (°C)	UL 746
RTI Imp (0.0591 in (1.50 mm))	149 (65.0)	--	°F (°C)	UL 746
RTI Elec (0.0591 in (1.50 mm))	149 (65.0)	--	°F (°C)	UL 746

Extrusion	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	176 °F	80.0 °C
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.10 %	0.10 %
Cylinder Zone 1 Temp.	473 to 500 °F	245 to 260 °C
Cylinder Zone 3 Temp.	464 to 491 °F	240 to 255 °C
Cylinder Zone 5 Temp.	464 to 482 °F	240 to 250 °C
Adapter Temperature	437 to 473 °F	225 to 245 °C
Melt Temperature	464 to 482 °F	240 to 250 °C
Die Temperature	437 to 464 °F	225 to 240 °C

Extrusion Notes

Flange Temperature: 225 to 240°C

Notes

¹ Typical properties: these are not to be construed as specifications.

² Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

