



Ultramid® 8202C HS

BASF Corporation - Polyamide 6

Monday, November 4, 2019

General Information

Product Description

Ultramid 8202C HS is a heat stabilized, low viscosity, PA6 injection molding homopolymer possessing a modified crystalline structure for increased property performance and faster cycles. It is also available in pigmented versions.

Applications

Ultramid 8202C HS is generally recommended for applications such as gears, valves, fittings, insulators, bushings, slides, window hardware, wiring devices, textile components and furniture casters.

General

Material Status	• Commercial: Active
Availability	• North America
Additive	• Heat Stabilizer
Features	• Crystalline • Fast Molding Cycle • Heat Stabilized • Homopolymer • Low Viscosity
Uses	• Bushings • Electrical Parts • Fittings • Furniture • Gears • Insulation • Textile Applications • Valves/Valve Parts
Agency Ratings	• EC 1907/2006 (REACH)
RoHS Compliance	• RoHS Compliant
Automotive Specifications	• FORD WSK-M4D672-A
Appearance	• Colors Available
Forms	• Pellets
Processing Method	• Injection Molding

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density / Specific Gravity	1.13	--		ASTM D792
Density	1.13	--	g/cm ³	ISO 1183
Molding Shrinkage - Flow (0.125 in)	9.0E-3	--	in/in	
Water Absorption (24 hr)	1.6	--	%	ASTM D570
Water Absorption (24 hr, 73°F)	1.6	--	%	ISO 62
Water Absorption (Saturation)	9.3	--	%	ASTM D570
Water Absorption Saturation, 73°F	9.3	--	%	ISO 62
Water Absorption Equilibrium, 50% RH	2.6	--	%	ASTM D570
Water Absorption Equilibrium, 73°F, 50% RH	2.6	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				ISO 527-2
-40°F	593000	--	psi	
73°F	537000	197000	psi	
176°F	109000	--	psi	
248°F	79800	--	psi	
302°F	64500	--	psi	

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Strength				ASTM D638
Yield, -40°F	19900	20600	psi	
Yield, 73°F	13100	6960	psi	
Yield, 176°F	5800	4350	psi	
Yield, 250°F	4350	3630	psi	
Tensile Stress				ISO 527-2
Yield, -40°F	19900	20600	psi	
Yield, 73°F	12800	6240	psi	
Yield, 176°F	5800	4350	psi	
Yield, 248°F	4350	3630	psi	
Yield, 302°F	3630	--	psi	
Tensile Strength				ASTM D638
Break, -40°F	18900	11600	psi	
Break, 73°F	13100	10200	psi	
Break, 176°F	5080	4350	psi	
Break, 250°F	3630	2900	psi	
Tensile Elongation				ASTM D638
Yield, -40°F	3.0	3.0	%	
Yield, 73°F	4.0	22	%	
Yield, 176°F	25	25	%	
Yield, 250°F	27	30	%	
Tensile Strain (Yield, 73°F)	4.0	22	%	ISO 527-2
Tensile Elongation				ASTM D638
Break, -40°F	5.0	3.0	%	
Break, 73°F	12	> 100	%	
Break, 176°F	> 100	> 100	%	
Break, 250°F	> 100	> 100	%	
Nominal Tensile Strain at Break				ISO 527-2
-40°F	5.0	3.0	%	
73°F	7.0	> 50	%	
176°F	> 100	> 100	%	
248°F	> 100	> 100	%	
Flexural Modulus				ASTM D790
-40°F	489000	609000	psi	
73°F	460000	141000	psi	
149°F	87000	--	psi	
194°F	63800	--	psi	
250°F	55800	--	psi	
Flexural Modulus (73°F)	406000	--	psi	ISO 178
Flexural Strength				ASTM D790
-40°F	26500	24400	psi	
73°F	16000	6090	psi	
149°F	4350	--	psi	
250°F	3050	--	psi	
Flexural Stress (73°F)	13800	--	psi	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
73°F	1.7	--	ft·lb/in ²	

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Unnotched Impact Strength 73°F	No Break	--		ISO 179
Notched Izod Impact -40°F	0.60	0.39	ft·lb/in	ASTM D256
73°F	0.90	3.2	ft·lb/in	
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness (R-Scale)	120	--		ASTM D785
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load 66 psi, Unannealed	374	--	°F	ASTM D648
Heat Deflection Temperature 66 psi, Unannealed	329	--	°F	ISO 75-2/B
Deflection Temperature Under Load 264 psi, Unannealed	167	--	°F	ASTM D648
Heat Deflection Temperature 264 psi, Unannealed	149	--	°F	ISO 75-2/A
Peak Melting Temperature	428	--	°F	ASTM D3418
Melting Temperature (DSC)	428	--	°F	ISO 3146
CLTE - Flow	4.5E-5	--	in/in/°F	ASTM E831
RTI Elec				UL 746
0.028 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
0.24 in	266	--	°F	
RTI Imp				UL 746
0.028 in	203	--	°F	
0.06 in	221	--	°F	
0.12 in	221	--	°F	
0.24 in	221	--	°F	
RTI Str				UL 746
0.028 in	203	--	°F	
0.06 in	221	--	°F	
0.12 in	221	--	°F	
0.24 in	221	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0591 in)	> 1.0E+15	--	ohms·cm	ASTM D257
Volume Resistivity	> 1.0E+15	--	ohms·cm	IEC 60093
Dielectric Strength 0.0591 in, Method A (Short-Time)	760	--	V/mil	ASTM D149
Comparative Tracking Index	600	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.028 in	V-2	--		
0.06 in	V-2	--		
0.12 in	V-2	--		
0.24 in	V-2	--		

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Additional Information	Dry	Conditioned	Unit	Test Method
Drop Weight Impact Strength 73°F	90.0	> 200	ft·lb	Internal Method

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Drying Time	2.0 to 4.0	hr
Suggested Max Moisture	0.15	%
Processing (Melt) Temp	464 to 545	°F
Mold Temperature	149 to 176	°F
Injection Pressure	508 to 1810	psi
Injection Rate	Fast	

Notes

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