



Ultramid® 8202C

BASF Corporation - Polyamide 6

Monday, November 4, 2019

General Information

Product Description

Ultramid 8202C is a modified crystalline and low viscosity, PA6 injection molding homopolymer. It is also available in heat stabilized (Ultramid 8202C HS) and/or pigmented versions. Its unique crystalline structure results in increased strength, stiffness, heat distortion temperature and performance under load as a homopolymer. It also cycles faster while maintaining properties and chemical resistance.

Applications

Ultramid 8202C is ideally suited for applications such as: furniture casters, gears, window hardware, and fittings, insulators, bushings, valves, relays, wiring devices, and other electrical components.

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• North America	
Features	• Chemical Resistant	• Fast Molding Cycle	• Homopolymer
	• Crystalline	• Good Processability	• Low Viscosity
Uses	• Bushings	• Fittings	• Valves/Valve Parts
	• Electrical Parts	• Furniture	
	• Electrical/Electronic Applications • Gears		
Agency Ratings	• EC 1907/2006 (REACH)		
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• CHRYSLER MS-DB-41 CPN1700 Color: Natural	• HYUNDAI MS211-5 Color: Natural	• HYUNDAI MS213-8 Color: Natural
Appearance	• Colors Available		
Forms	• Pellets		
Processing Method	• Injection Molding		

ASTM & ISO Properties¹

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	257	--	°F	
0.06 in	257	--	°F	
0.12 in	257	--	°F	
0.24 in	257	--	°F	
RTI Imp				UL 746
0.028 in	149	--	°F	
0.06 in	167	--	°F	
0.12 in	167	--	°F	
0.24 in	167	--	°F	
RTI Str				UL 746
0.028 in	149	--	°F	
0.06 in	185	--	°F	
0.12 in	185	--	°F	
0.24 in	185	--	°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.