Ultramid® 8202C HS BK102

BASF Corporation - Polyamide 6

Monday, November 4, 2019

General Information

Product Description

Ultramid 8202C HS BK102 is a heat stabilized, low viscosity, pigmented black, PA6, injection molding homopolymer possessing a modified crystalline structure for increased property performance and faster cycles. It is also available in non-heat stabilized (Ultramid 8202C).

Applications

Ultramid 8202C HS BK102 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 • Heat Stabilized	• Homopolymer • Low Viscosity	
Uses	• Bushings • Fittings • Furniture	• Gears • Insulation • Textile Applications	• Valves/Valve Parts
Agency Ratings	• EC 1907/2006 (REACH)		
RoHS Compliance	• RoHS Compliant		
Appearance	• Black		
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/cm³	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				ISO 62
Saturation, 73°F	9.3	--	%	
Water Absorption				ASTM D570
Equilibrium, 50% RH	2.6	--	%	
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	2.6	--	%	
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus (73°F)	508000	197000	psi	ISO 527-2
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 (Yield, 73°F)	12300	6240	psi	ISO 527-2

Ultramid® 8202C HS BK102
BASF Corporation - Polyamide 6

Mechanical	Dry	Conditioned	Unit	Test Method
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
73°F	10	> 50	%	
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	1.4	--	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179
73°F	No Break	--		
Notched Izod Impact				ASTM D256
-40°F	0.60	0.39	ft·lb/in	
73°F	0.90	3.2	ft·lb/in	
Hardness	**Dry**	**Conditioned**	**Unit**	**Test Method**
Rockwell Hardness (R-Scale)	120	--		ASTM D785
Ball Indentation Hardness	29000	--	psi	ISO 2039-1
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load				ASTM D648
66 psi, Unannealed	374	--	°F	
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	320	--	°F	
Deflection Temperature Under Load				ASTM D648
264 psi, Unannealed	167	--	°F	

Ultramid® 8202C HS BK102
BASF Corporation - Polyamide 6

Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	140	--	°F	
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
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	--		

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

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.