

Ultramid® 8231G HS BK-102

Polyamide 6

BASF Corporation

Message:

Ultramid 8231G HS BK-102 is a black pigmented heat stabilized, 15% glass fiber reinforced PA6 injection molding compound. The glass fiber reinforcement enhances performance such as strength, stiffness and heat deflection temperature. The heat stabilizer system extends the properties at elevated temperatures. It also has excellent chemical resistance to greases, oils and hydrocarbons.

Applications

Ultramid 8231G HS BK-102 is ideally suited for more demanding performance applications such as safety helmet parts, washers, gears, engine and motor parts, chutes, and higher temperature environments.

General Information				
UL YellowCard		E36632-231123		
Filler / Reinforcement		Glass Fiber,14% Filler by Weight		
Additive		Heat Stabilizer		
Features		Good Abrasion Resistance		
		Good Chemical Resistance		
		Good Dimensional Stability		
		Good Flow		
		Good Processability		
		Good Stiffness		
		Good Surface Finish		
		Good Thermal Aging Resistance		
		Good Thermal Stability		
		Heat Stabilized		
		High Gloss		
		High Strength		
		Low Viscosity		
		Semi Crystalline		
		Warp Resistant		
Uses		Automotive Interior Parts		
		Gears		
		Safety Helmets		
		Washer		
Agency Ratings		EC 1907/2006 (REACH)		
RoHS Compliance		RoHS Compliant		
Appearance		Black		
Forms		Pellets		
Processing Method		Injection Molding		
Physical	Dry	Conditioned	Unit	Test Method

Specific Gravity	1.23	--	g/cm ³	ASTM D792, ISO 1183
Molding Shrinkage - Flow (3.18 mm)	0.50	--	%	
Water Absorption				
24 hr	1.4	--	%	ASTM D570
23°C, 24 hr	1.4	--	%	ISO 62
Saturation	8.1	--	%	ASTM D570
Saturation, 23°C	8.1	--	%	ISO 62
Equilibrium, 50% RH	2.3	--	%	ASTM D570
Equilibrium, 23°C, 50% RH	2.3	--	%	ISO 62
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness (R-Scale)	121	--		ASTM D785
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				ISO 527-2
-40°C	6880	6900	MPa	
23°C	6130	3100	MPa	
80°C	2450	2300	MPa	
121°C	2020	1800	MPa	
Tensile Strength				ASTM D638, ISO 527-2
Break, -40°C	150	150	MPa	
Break, 23°C	130	60.0	MPa	
Break, 80°C	60.0	30.0	MPa	
Break, 121°C	50.0	40.0	MPa	
Tensile Elongation				
Break, -40°C	3.0	3.0	%	ASTM D638
Break, 23°C	3.0	20	%	ASTM D638, ISO 527-2
Break, 80°C	14	15	%	ASTM D638
Break, 121°C	10	9.0	%	ASTM D638
Flexural Modulus				
23°C	5200	--	MPa	ASTM D790
23°C	4770	2210	MPa	ISO 178
Flexural Stress (23°C)	160	65.0	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength (23°C)	4.0	--	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength (23°C)	31	--	kJ/m ²	ISO 179
Notched Izod Impact (23°C)	45	--	J/m	ASTM D256
Drop Impact Resistance (23°C)	2.71	--	J	Internal Method
Thermal	Dry	Conditioned	Unit	Test Method

Heat Deflection Temperature				
0.45 MPa, Unannealed	210	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	201	--	°C	ASTM D648
1.8 MPa, Unannealed	196	--	°C	ISO 75-2/A
Peak Melting Temperature	220	--	°C	ASTM D3418, ISO 3146
CLTE - Flow	5.0E-5	--	cm/cm/°C	ASTM E831
RTI Elec				UL 746
0.800 mm	130	--	°C	
1.50 mm	130	--	°C	
3.00 mm	130	--	°C	
6.00 mm	130	--	°C	
RTI Imp				UL 746
0.800 mm	95.0	--	°C	
1.50 mm	105	--	°C	
3.00 mm	105	--	°C	
6.00 mm	105	--	°C	
RTI Str				UL 746
0.800 mm	105	--	°C	
1.50 mm	105	--	°C	
3.00 mm	105	--	°C	
6.00 mm	105	--	°C	
Flammability	Dry	Conditioned		Test Method
Flame Rating				UL 94
0.800 mm	HB	--		
1.50 mm	HB	--		
3.00 mm	HB	--		
6.00 mm	V-2	--		
Injection	Dry	Unit		
Drying Temperature	80.0		°C	
Drying Time	2.0 to 4.0		hr	
Suggested Max Moisture	0.15		%	
Processing (Melt) Temp	250 to 290		°C	
Mold Temperature	80.0 to 95.0		°C	
Injection Pressure	3.50 to 12.5		MPa	
Injection Rate	Fast			

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