

Ultramid® 8231G HS

Polyamide 6

BASF Corporation

Message:

Ultramid 8231G HS is a heat stabilized, 15% glass fiber reinforced PA6 injection molding compound. It is also available in non-heat stabilized (Ultramid 8231) and/or pigmented versions. 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 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, 15% Filler by Weight		
Additive		Heat Stabilizer		
Features		Good Chemical Resistance		
		Good Stiffness		
		Good Strength		
		Grease Resistant		
		Heat Stabilized		
		Hydrocarbon Resistant		
Uses		Oil Resistant		
		Automotive Applications		
		Gears		
		High Temperature Applications		
		Safety Helmets		
Agency Ratings		Washer		
		EC 1907/2006 (REACH)		
		RoHS Compliant		
		Colors Available		
		Pellets		
Forms		Injection Molding		
Processing Method		Isothermal Stress vs. Strain (ISO 11403-1)		
Multi-Point Data		Secant Modulus vs. Strain (ISO 11403-1)		
		Viscosity vs. Shear Rate (ISO 11403-2)		
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	5950	6600	MPa	
23°C	5960	2640	MPa	
80°C	2470	2300	MPa	
121°C	2090	1900	MPa	
Tensile Strength				
Break, -40°C	160	170	MPa	ASTM D638, ISO 527-2
Break, 23°C	140	79.0	MPa	ASTM D638
Break, 80°C	60.0	20.0	MPa	ASTM D638, ISO 527-2
Break, 121°C	50.0	40.0	MPa	ASTM D638, ISO 527-2
Break, 23°C	140	80.0	MPa	ISO 527-2
Tensile Elongation				
Break, -40°C	3.0	4.0	%	ASTM D638
Break, 23°C	4.0	9.0	%	ASTM D638, ISO 527-2
Break, 80°C	8.0	15	%	ASTM D638
Break, 121°C	7.0	6.0	%	ASTM D638
Flexural Modulus				
-40°C	5860	6430	MPa	ASTM D790
23°C	5310	2400	MPa	ASTM D790
65°C	2400	--	MPa	ASTM D790
121°C	1930	--	MPa	ASTM D790
23°C	4770	2210	MPa	ISO 178
Flexural Strength				
-40°C	214	219	MPa	ASTM D790
23°C	172	101	MPa	ASTM D790
65°C	110	--	MPa	ASTM D790
90°C	90.0	--	MPa	ASTM D790
121°C	76.0	--	MPa	ASTM D790
23°C	160	65.0	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method

Charpy Notched Impact Strength		ISO 179		
-30°C	5.5	--	kJ/m ²	
23°C	6.5	--	kJ/m ²	
Charpy Unnotched Impact Strength (23°C)		--	kJ/m ²	ISO 179
Notched Izod Impact				
23°C	59	--	J/m	ASTM D256
23°C	5.0	--	kJ/m ²	ISO 180
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	217	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	200	--	°C	ASTM D648
1.8 MPa, Unannealed	195	--	°C	ISO 75-2/A
Peak Melting Temperature	220	--	°C	ASTM D3418, ISO 3146
CLTE				
Flow	5.0E-5	--	cm/cm/°C	ASTM E831
Flow	3.9E-5	--	cm/cm/°C	
Transverse	7.8E-5	--	cm/cm/°C	
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	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity				
1.50 mm	> 1.0E+13	--	ohms·cm	ASTM D257
--	> 1.0E+13	--	ohms·cm	IEC 60093
Electric Strength	40	--	kV/mm	IEC 60243-1
Dielectric Constant				IEC 60250
100 Hz	3.60	--		
1 MHz	3.40	--		

Dissipation Factor			IEC 60250	
100 Hz	0.010	--		
1 MHz	0.020	--		
Flammability	Dry	Conditioned	Unit	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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