

Ultramid® 8233G HS

Polyamide 6

BASF Corporation

Message:

Ultramid 8233G HS is a heat stabilized, 33% glass fiber reinforced PA6 injection molding compound offering excellent strength, stiffness, high temperature performance and dimensional stability. It is also available in non-heat stabilized (Ultramid 8233G) and/or pigmented versions.

Applications

Ultramid 8233G HS is generally recommended for applications such as power tool housings, weed trimmer components, gears, automotive housings and under hood applications.

General Information				
UL YellowCard		E36632-231130		
Filler / Reinforcement		Glass Fiber,33% Filler by Weight		
Additive		Heat Stabilizer		
Features		Good Dimensional Stability		
		Good Stiffness		
		Heat Stabilized		
		High Strength		
Uses		Automotive Applications		
		Automotive Under the Hood		
		Gears		
		Housings		
		Lawn and Garden Equipment		
		Power/Other Tools		
Agency Ratings		EC 1907/2006 (REACH)		
RoHS Compliance		RoHS Compliant		
Appearance		Colors Available		
Forms		Pellets		
Processing Method		Injection Molding		
Multi-Point Data		Isothermal Stress vs. Strain (ISO 11403-1)		
		Secant Modulus vs. Strain (ISO 11403-1)		
		Shear Modulus vs. Temperature (ISO 11403-1)		
		Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity	1.39	--	g/cm ³	ASTM D792, ISO 1183
Molding Shrinkage - Flow (3.18 mm)	0.30	--	%	
Water Absorption				
24 hr	1.1	--	%	ASTM D570

23°C, 24 hr	1.1	--	%	ISO 62
Saturation	6.4	--	%	ASTM D570
Saturation, 23°C	6.4	--	%	ISO 62
Equilibrium, 50% RH	1.8	--	%	ASTM D570
Equilibrium, 23°C, 50% RH	1.8	--	%	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	10500	11600	MPa	
23°C	10100	5840	MPa	
80°C	4430	4300	MPa	
121°C	3550	3400	MPa	
Tensile Strength				
Break, -40°C	283	255	MPa	ASTM D638, ISO 527-2
Break, 23°C	195	125	MPa	ASTM D638
Break, 80°C	110	80.0	MPa	ASTM D638, ISO 527-2
Break, 121°C	83.0	60.0	MPa	ASTM D638, ISO 527-2
Break, 23°C	185	125	MPa	ISO 527-2
Tensile Elongation				
Break, -40°C	3.6	3.5	%	ASTM D638
Break, 23°C	3.5	6.0	%	ASTM D638, ISO 527-2
Break, 80°C	7.0	6.0	%	ASTM D638
Break, 121°C	7.0	6.0	%	ASTM D638
Flexural Modulus				
-40°C	9830	10200	MPa	ASTM D790
23°C	9040	5130	MPa	ASTM D790
65°C	4020	--	MPa	ASTM D790
90°C	3750	--	MPa	ASTM D790
121°C	3320	--	MPa	ASTM D790
23°C	8200	5200	MPa	ISO 178
Flexural Strength				
-40°C	380	361	MPa	ASTM D790
23°C	297	179	MPa	ASTM D790
65°C	160	--	MPa	ASTM D790
90°C	140	--	MPa	ASTM D790
121°C	112	--	MPa	ASTM D790
23°C	260	130	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179

-30°C	10	--	kJ/m ²	
23°C	15	--	kJ/m ²	
Charpy Unnotched Impact Strength (23°C)	88	--	kJ/m ²	ISO 179
Notched Izod Impact				
-40°C	110	110	J/m	ASTM D256
23°C	150	240	J/m	ASTM D256
-40°C	8.5	--	kJ/m ²	ISO 180
23°C	10	--	kJ/m ²	ISO 180
Drop Impact Resistance (23°C)	4.07	6.78	J	Internal Method
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	218	--	°C	ASTM D648
0.45 MPa, Unannealed	215	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	210	--	°C	ASTM D648
1.8 MPa, Unannealed	205	--	°C	ISO 75-2/A
Peak Melting Temperature	220	--	°C	ASTM D3418, ISO 3146
CLTE				
Flow	3.8E-5	--	cm/cm/°C	ASTM E831
Flow	2.1E-5	--	cm/cm/°C	
Transverse	7.0E-5	--	cm/cm/°C	
RTI Elec				UL 746
0.710 mm	130	--	°C	
1.50 mm	140	--	°C	
3.00 mm	140	--	°C	
RTI Imp				UL 746
0.710 mm	115	--	°C	
1.50 mm	115	--	°C	
3.00 mm	120	--	°C	
RTI Str				UL 746
0.710 mm	130	--	°C	
1.50 mm	140	--	°C	
3.00 mm	140	--	°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	44	--	kV/mm	IEC 60243-1
Dielectric Constant				IEC 60250
100 Hz	4.20	--		
1 MHz	3.60	--		

Dissipation Factor			IEC 60250	
100 Hz	0.020	--		
1 MHz	0.020	--		
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.600 mm	HB	--		
0.710 mm	HB	--		
1.50 mm	HB	--		
3.00 mm	HB	--		
Injection	Dry	Unit		
Drying Temperature	83.0		°C	
Drying Time	2.0 to 4.0		hr	
Suggested Max Moisture	0.15		%	
Processing (Melt) Temp	270 to 295		°C	
Mold Temperature	80.0 to 95.0		°C	
Injection Pressure	3.50 to 12.5		MPa	
Injection Rate	Fast			

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