



Ultramid® A3X2G5

BASF Corporation - Polyamide 66

Monday, November 4, 2019

General Information

Product Description

Ultramid A3X2G5 is a 25% glass fiber reinforced injection molding PA66 grade with improved flame retardance and enhanced long-term performance. Flame retardant based on red phosphorus; outstanding mechanical and electrical properties.

General

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Filler / Reinforcement	• Glass Fiber, 25% Filler by Weight
Additive	• Flame Retardant [Red phosphorus]
Features	• Flame Retardant • Good Electrical Properties • Oil Resistant
Agency Ratings	• EC 1907/2006 (REACH)
RoHS Compliance	• RoHS Compliant
Automotive Specifications	• CHRYSLER MS-DB-41 CPN3879 Color: Black • CHRYSLER MS-DB-41 CPN3879 Color: Natural
Forms	• Pellets
Processing Method	• Injection Molding

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density / Specific Gravity	1.34	--		ASTM D792
Density	1.34	--	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR)				ISO 1133
275°C/5.0 kg	40	--	cm ³ /10min	
Molding Shrinkage - Flow (0.125 in)	5.0E-3	--	in/in	
Water Absorption (Saturation)	6.0	--	%	ASTM D570
Water Absorption				ISO 62
Saturation, 73°F	6.0	--	%	
Water Absorption				ASTM D570
Equilibrium, 50% RH	1.4	--	%	
Water Absorption				ISO 62
Equilibrium, 73°F, 50% RH	1.4	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus (73°F)	1.23E+6	870000	psi	ISO 527-2
Tensile Strength (Break, 73°F)	20000	--	psi	ASTM D638
Tensile Stress				ISO 527-2
Break, -40°F	28400	--	psi	
Break, 73°F	20300	14500	psi	
Tensile Elongation (Break, 73°F)	3.0	--	%	ASTM D638
Tensile Strain				ISO 527-2
Break, -40°F	3.5	--	%	
Break, 73°F	3.0	4.5	%	
Flexural Modulus (73°F)	1.03E+6	--	psi	ASTM D790

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179
-22°F	4.8	--	ft·lb/in ²	
73°F	6.2	8.1	ft·lb/in ²	
Charpy Unnotched Impact Strength				ISO 179
-22°F	29	31	ft·lb/in ²	
73°F	31	33	ft·lb/in ²	
Notched Izod Impact				ASTM D256
-40°F	1.2	--	ft·lb/in	
73°F	1.4	--	ft·lb/in	
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				ASTM D648
66 psi, Unannealed	482	--	°F	
Heat Deflection Temperature				ISO 75-2/B
66 psi, Unannealed	482	--	°F	
Deflection Temperature Under Load				ASTM D648
264 psi, Unannealed	460	--	°F	
Heat Deflection Temperature				ISO 75-2/A
264 psi, Unannealed	482	--	°F	
Peak Melting Temperature	500	--	°F	ASTM D3418
Melting Temperature (DSC)	500	--	°F	ISO 3146
CLTE - Flow	1.1E-5	--	in/in/°F	ASTM E831
CLTE - Flow	1.7E-5	--	in/in/°F	
CLTE - Transverse	3.9E-5	--	in/in/°F	
RTI Elec				UL 746
0.024 in	230	--	°F	
0.03 in	248	--	°F	
0.06 in	248	--	°F	
0.12 in	248	--	°F	
RTI Imp				UL 746
0.024 in	239	--	°F	
0.03 in	239	--	°F	
0.06 in	239	--	°F	
0.12 in	239	--	°F	
RTI Str				UL 746
0.03 in	266	--	°F	
0.06 in	266	--	°F	
0.12 in	266	--	°F	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity (0.0591 in)	1.0E+15	1.0E+12	ohms·cm	ASTM D257
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Electric Strength	840	760	V/mil	IEC 60243-1
Dielectric Constant (1 MHz)	3.70	5.00		IEC 60250
Dissipation Factor (1 MHz)	0.020	0.10		IEC 60250
Comparative Tracking Index	550	550	V	IEC 60112

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Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.024 in	HB	--		
0.03 in	V-0	--		
0.06 in	V-0	--		
0.12 in	V-0	--		

Processing Information			
Injection		Dry	Unit
Drying Temperature		176	°F
Drying Time		2.0 to 4.0	hr
Suggested Max Moisture		0.050	%
Processing (Melt) Temp		545 to 572	°F
Mold Temperature		176 to 194	°F
Injection Pressure		508 to 1810	psi
Injection Rate		Fast	

Notes

¹ Typical properties: these are not to be construed as specifications.