Ultramid® A 225F NATURAL

BASF Corporation - Polyamide 66

Wednesday, May 17, 2023

General Information

Product Description

Ultramid® A 225F Natural is an unfilled polyamide 66, medium viscosity, for injection moulding, with a special crystallizing agent, for very fast cycles. This grade offers a good combination between primary properties of the unreinforced polyamide 66 and processing properties leading to increased productivity. These performances are associated with excellent dimensional stability, and excellent filling qualities. The UL94 V2 rating at 0.4mm makes that the product is particularly used in electrical applications.

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Latin America	• North America
Features	• Fast Molding Cycle • Good Dimensional Stability	• Good Flow • Good Mold Release	
Uses	• Consumer Applications • Electrical/Electronic Applications	• Industrial Applications • Valves/Valve Parts	• White Goods & Small Appliances
Agency Ratings	• EC 1907/2006 (REACH)		
RoHS Compliance	• RoHS Compliant		
Appearance	• Natural Color		
Forms	• Pellets		
Processing Method	• Injection Molding		
Resin ID (ISO 1043)	• PA66		

ASTM & ISO Properties [1]

Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	1.3	--	%	
Flow	1.3	--	%	
Water Absorption (24 hr, 73°F)	1.1	--	%	ISO 62
Mechanical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Tensile Modulus	522000	232000	psi	ISO 527-1
Tensile Strength [2] (Yield)	12300	7250	psi	ASTM D638
Tensile Stress (Yield)	13800	8700	psi	ISO 527-2/50
Tensile Stress (Break)	10200	7250	psi	ISO 527-2
Tensile Strain (Yield)	5.0	25	%	ISO 527-2/50
Tensile Elongation [2] (Break)	14	> 200	%	ASTM D638
Tensile Strain (Break)	20	100	%	ISO 527-2
Flexural Modulus	457000	203000	psi	ISO 178
Flexural Stress	18100	7980	psi	ISO 178

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Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
73°F	1.9	4.8	ft·lb/in²	
Charpy Unnotched Impact Strength				ISO 179/1eU
73°F	No Break	No Break		
Notched Izod Impact Strength				ISO 180/A
73°F	2.4	5.7	ft·lb/in²	
Unnotched Izod Impact (Area)				ASTM D256
73°F	64.2	--	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Deflection Temperature Under Load				ISO 75-2/B
66 psi, Unannealed	392	--	°F	
Deflection Temperature Under Load				ISO 75-2/A
264 psi, Unannealed	167	--	°F	
Melting Temperature	505	--	°F	ISO 11357-3
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Surface Resistivity	--	4.0E+13	ohms	IEC 62631-3-2
Volume Resistivity	4.0E+15	1.0E+16	ohms·m	IEC 62631-3-1
Electric Strength				IEC 60243-1
0.0315 in	890	--	V/mil	
0.0787 in	560	--	V/mil	
Relative Permittivity (1 MHz)	3.50	--		IEC 62631-2-1
Dissipation Factor (1 MHz)	0.033	--		IEC 62631-2-1
Comparative Tracking Index				IEC 60112
Solution A	600	600	V	
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating				UL 94
0.031 in	V-2	--		
0.13 in	V-2	--		
Flammability Classification				IEC 60695-11-10, -20
0.016 in	V-2	--		
0.03 in	V-2	--		
0.06 in	V-2	--		
0.13 in	V-2	--		
Glow Wire Flammability Index				IEC 60695-2-12
0.06 in	1290	--	°F	

Processing Information

Injection	Dry	Unit
Drying Temperature	176	°F
Suggested Max Moisture	0.20	%
Rear Temperature	509 to 527	°F
Middle Temperature	518 to 536	°F
Front Temperature	536 to 545	°F
Mold Temperature	140 to 176	°F

Injection Notes

The material is supplied in airtight bags, ready for use. In case that the virgin material has absorbed moisture, it must be dried with a dehumidified air drying equipment, dew point mini -20°C. Recommended time 2-4h

Injection Advice:

- For unfilled polyamides, BASF SE recommends the use of high alloy steel with a low chromium content. For example: X38CrMoV5-1 (EN Norm) - 1.2367 /1.2343 (DIN Norm). In the case of high requirements on surface quality a mould temperature of up to 120°C can be considered.
- The processing parameters like processing temperatures are a recommendation and can be adjusted in function of injection machine size, part geometry / design

Notes

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

[2] 2.0 in/min