

Zytel® MT409AHS NC010

NYLON RESIN
DuPont Performance Polymers

Message:
Toughened, Heat Stabilized, Polyamide 66

General Information				
UL YellowCard		E41938-234514		
Additive		heat stabilizer		
		demoulding		
Features		Thermal Stability		
RoHS Compliance		Contact manufacturer		
Forms		Particle		
Processing Method		Profile extrusion molding		
		Injection molding		
Multi-Point Data		Isothermal Stress vs. Strain (ISO 11403-1)		
		Secant Modulus vs. Strain (ISO 11403-1)		
		Shear Modulus vs. Temperature, Dynamic (ISO 11403-1)		
		Shear Stress vs. Shear Rate (ISO 11403-1)		
		Tensile Modulus vs. Temperature (ISO 11403-1)		
		Tensile Modulus vs. Temperature, Dynamic (ISO 11403-1)		
		Viscosity vs. Shear Rate (ISO 11403-2)		
Part Marking Code (ISO 11469)		>PA66-I		
Resin ID (ISO 1043)		PA66-I		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.11	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Transverse flow	1.7	--	%	ISO 294-4
Flow	1.5	--	%	ISO 294-4
Water Absorption				ISO 62
23°C, 24 hr	1.3	--	%	ISO 62
Saturated, 23°C, 2.00mm	4.9	--	%	ISO 62
Balance, 23°C, 2.00mm, 50% RH	1.4	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	2400	1100	MPa	ISO 527-2
Tensile Stress (Yield)	61.0	43.0	MPa	ISO 527-2

Tensile Strain (Yield)	5.0	28	%	ISO 527-2
Nominal Tensile Strain at Break	25	> 50	%	ISO 527-2
Flexural Modulus	2200	1000	MPa	ISO 178
Flexural Stress ¹	75.0	53.0	MPa	ISO 178
Films	Dry	Conditioned	Unit	Test Method
Tensile Elongation - MD (Yield)	4.4	--	%	ISO 527-3
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°C	13	--	kJ/m ²	ISO 179/1eA
-30°C	13	13	kJ/m ²	ISO 179/1eA
23°C	21	40	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	No Break	No Break		ISO 179/1eU
23°C	No Break	No Break		ISO 179/1eU
Notched Izod Impact				ISO 180/1A
-40°C	13	11	kJ/m ²	ISO 180/1A
-30°C	15	15	kJ/m ²	ISO 180/1A
23°C	18	29	kJ/m ²	ISO 180/1A
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	205	--	°C	ISO 75-2/B
1.8 MPa, not annealed	66.0	--	°C	ISO 75-2/A
Glass Transition Temperature ²	80.0	--	°C	ISO 11357-2
Melting Temperature ³	262	--	°C	ISO 11357-3
Linear thermal expansion coefficient				ISO 11359-2
Flow	1.0E-4	--	cm/cm/°C	ISO 11359-2
Lateral	1.2E-4	--	cm/cm/°C	ISO 11359-2
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	--	1.0E+13	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	3.0E+12	ohms·cm	IEC 60093
Dielectric Strength	23	22	kV/mm	IEC 60243-1
Relative Permittivity				IEC 60250
100 Hz	3.60	6.60		IEC 60250
1 MHz	3.40	3.70		IEC 60250
Dissipation Factor				IEC 60250
100 Hz	5.0E-3	0.18		IEC 60250
1 MHz	0.012	0.044		IEC 60250

Comparative Tracking Index	600	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate ⁴ (1.00 mm)	29	--	mm/min	ISO 3795
Flame Rating				
1.5 mm	HB	--		UL 94, IEC 60695-11-10, -20
0.8 mm	HB	--		IEC 60695-11-10, -20
FMVSS Flammability	B	--		FMVSS 302
Atomization-G-value (condensate)	1.0E-4	--	g	ISO 6452
Specific Heat Capacity of Melt	2730	--	J/kg/°C	
Thermal Conductivity of Melt	0.14	--	W/m/K	
Emission of Organic Compounds	10.0	--	µgC/g	VDA 277
Odor	4.00	--		VDA 270
Melt Temperature, Optimum	290		°C	
Mold Temperature, Optimum	80		°C	
Drying Recommended	yes			
Hold Pressure Time	4.00		s/mm	
Maximum Screw Tangential Speed	300		mm/sec	
Fill Analysis	Dry	Conditioned	Unit	Test Method
Melt Density	0.930	--	g/cm ³	
Ejection Temperature	190	--	°C	
Injection	Dry	Unit		
Drying Temperature	80		°C	
Drying Time - Desiccant Dryer	2.0 - 4.0		hr	
Suggested Max Moisture	0.20		%	
Processing (Melt) Temp	280 - 300		°C	
Mold Temperature	50 - 100		°C	
Holding Pressure	50.0 - 100		MPa	
NOTE				
1.	Calculated			
2.	10°C/min			
3.	10°C/min			
4.	FMVSS 302			

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China



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