

Akulon® F223-D

Polyamide 6
DSM Engineering Plastics

Message:

Akulon® F223-D is a Polyamide 6 (Nylon 6) material. It is available in Asia Pacific, Europe, or North America for injection molding.
Important attributes of Akulon® F223-D are:
Flame Rated
Medium Viscosity

General Information				
UL YellowCard		E43392-235054	E47960-240084	
Features		Medium-low Viscosity		
Processing Method		Injection Molding		
Multi-Point Data		Creep Modulus vs. Time (ISO 11403-1)		
		Isochronous Stress vs. Strain (ISO 11403-1)		
		Isothermal Stress vs. Strain (ISO 11403-1)		
		Secant Modulus vs. Strain (ISO 11403-1)		
		Shear Modulus vs. Temperature (ISO 11403-1)		
		Specific Volume vs Temperature (ISO 11403-2)		
		Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.13	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	1.1	--	%	
Flow	1.1	--	%	
Water Absorption				ISO 62
Saturation, 23°C	10	--	%	
Equilibrium, 23°C, 50% RH	2.8	--	%	
Viscosity Number	129	--	cm³/g	ISO 307
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	3200	1000	MPa	ISO 527-2
Tensile Stress (Yield)	85.0	45.0	MPa	ISO 527-2
Tensile Strain (Yield)	4.0	25	%	ISO 527-2
Nominal Tensile Strain at Break	20	> 50	%	ISO 527-2
Flexural Modulus	2600	--	MPa	ISO 178
Flexural Stress	100	--	MPa	ISO 178
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA

-30°C	5.0	5.0	kJ/m ²	
23°C	8.0	35	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	No Break	No Break		
23°C	No Break	No Break		
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	150	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	60.0	--	°C	ISO 75-2/A
Melting Temperature ¹	220	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow	9.0E-5	--	cm/cm/°C	
Transverse	1.0E-4	--	cm/cm/°C	
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	--	1.0E+14	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Electric Strength	30	20	kV/mm	IEC 60243-1
Relative Permittivity				IEC 60250
100 Hz	3.40	15.0		
1 MHz	3.10	4.70		
Dissipation Factor				IEC 60250
100 Hz	6.5E-3	0.39		
1 MHz	0.017	0.13		
Comparative Tracking Index	--	600	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flammability Classification				IEC 60695-11-10, -20
0.750 mm	V-2	--		
1.50 mm	V-2	--		
Glow Wire Flammability Index (1.50 mm)	800	--	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (1.50 mm)	775	--	°C	IEC 60695-2-13
Oxygen Index	26	--	%	ISO 4589-2
Injection	Dry	Unit		
Drying Temperature	80.0		°C	
Drying Time	4.0 to 8.0		hr	
Rear Temperature	230 to 235		°C	
Middle Temperature	235 to 250		°C	
Front Temperature	240 to 260		°C	
Nozzle Temperature	240 to 270		°C	
Processing (Melt) Temp	240 to 275		°C	

Mold Temperature	50.0 to 80.0	°C
Injection Rate	Moderate-Fast	
Back Pressure	3.00 to 10.0	MPa
Screw Compression Ratio	2.5:1.0	

NOTE

1. 10°C/min

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