

Eastar™ DN004, Natural

Copolyester
Eastman Chemical Company

Message:

Eastar™ Copolyester DN004 has been tested for FDA/ISO 10993 and USP Class VI Biological Evaluation testing after Gamma and EtO sterilization. Eastar™ copolyesters are brilliantly clear polymers that have excellent impact strength, chemical resistance, dimensional stability, and low shrinkage rates. DN004 contains a mold release.

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.

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General Information	
UL YellowCard	E118289-220134
Additive	Mold Release
Features	E-beam Sterilizable
	Good Chemical Resistance
	Good Dimensional Stability
	Good Impact Resistance
	Good Mold Release
	High Clarity
	Low Shrinkage
	Radiation Sterilizable
Uses	Appliance Components
	Appliances
	Cosmetic Packaging
	Eyeglass Frames
	Eyeglasses
	Flooring Maintenance/Repair
	Medical/Healthcare Applications
	Packaging
	Personal Care
	Sporting Goods
	Stationary Supplies
	Toothbrush Handles
	Toys
	Writing Instruments
Agency Ratings	ISO 10993
	USP Class VI

Appearance	Natural Color		
Forms	Pellets		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.23	g/cm ³	ASTM D792
23°C	1.23	g/cm ³	ISO 1183
Molding Shrinkage - Flow (3.20 mm)	0.20 to 0.50	%	ASTM D955
Water Absorption (23°C, 24 hr)	0.13	%	ASTM D570, ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale, 23°C)	105		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	1800	MPa	ASTM D638
Tensile Strength			
Yield, 23°C	45.0	MPa	ASTM D638
Yield, 23°C, 4.00 mm	46.0	MPa	ISO 527-2
Break, 23°C	52.0	MPa	ASTM D638
Break, 23°C, 4.00 mm	47.0	MPa	ISO 527-2
Tensile Elongation			
Yield, 23°C	5.0	%	ASTM D638
Yield, 23°C, 4.00 mm	4.4	%	ISO 527-2
Break, 23°C	330	%	ASTM D638
Break, 23°C, 4.00 mm	230	%	ISO 527-2
Flexural Modulus			
23°C	1800	MPa	ASTM D790
23°C, 4.00 mm	1800	MPa	ISO 178
Flexural Stress			
23°C, 4.00 mm	63.0	MPa	ISO 178
Yield, 23°C	66.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			
-40°C	64	J/m	ASTM D256
23°C	No Break		ASTM D256
-40°C	7.4	kJ/m ²	ISO 180
23°C	130	kJ/m ²	ISO 180
Unnotched Izod Impact			ASTM D4218
-40°C	No Break		
23°C	No Break		
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-40°C, Energy to Peak Force	16.0	J	
23°C, Energy to Peak Force	14.0	J	

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	74.0	°C	ASTM D648, ISO 75-2/B
1.8 MPa, Unannealed	64.0	°C	ASTM D648
1.8 MPa, Unannealed	65.0	°C	ISO 75-2/A
Vicat Softening Temperature			
--	88.0	°C	ASTM D1525, ISO 306/A 3 1
--	79.0	°C	ISO 306/B
Specific Heat			DSC
60°C	1340	J/kg/°C	
240°C	2050	J/kg/°C	
Thermal Conductivity (23°C)	0.19	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength ² (23°C)	16	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
23°C, 1 kHz	2.90		
23°C, 1 MHz	2.80		
Dissipation Factor			ASTM D150
23°C, 1 kHz	3.0E-3		
23°C, 1 MHz	0.013		
Arc Resistance	138	sec	ASTM D495
Comparative Tracking Index	> 600	V	ASTM D3638
High Voltage Arc Tracking Rate (HVTR)	0.00	mm/min	UL 746
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.60 mm	HB		
3.20 mm	HB		
Optical	Nominal Value	Unit	Test Method
Transmittance			ASTM D1003
Total	89.0	%	
Regular	87.0	%	
Haze	< 1.0	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	71.0	°C	
Drying Time	6.0	hr	
Processing (Melt) Temp	250 to 270	°C	
Mold Temperature	15.0 to 40.0	°C	
NOTE			
1.	Loading 1 (10 N)		
2.	500 V/sec, Method A (Short-Time)		

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