# Eastar™ EN052

## Copolyester

### Eastman Chemical Company

#### Message:

Eastar<sup>™</sup> Polyester EN052 is a thermoplastic condensation homopolymer produced by a continuous melt-phase polymerization process followed by a solid-state polymerization process. It has been crystallized.

This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.

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General Information			
Features	Crystalline		
	Homopolymer		
Uses	Consumer Applications		
	Cosmetics		
	Personal Care		
	Toothbrush Handles		
Forms	Pellets		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.32	g/cm³	ASTM D792
Molding Shrinkage - Flow (3.20 mm)	0.40	%	ASTM D955
Water Absorption (23°C, 24 hr)	0.10	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale, 23°C)	110		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638
Yield, 23°C	57.0	MPa	
Break, 23°C	26.0	MPa	
Tensile Elongation (Yield, 23°C)	4.0	%	ASTM D638
Flexural Modulus (23°C)	2500	MPa	ASTM D790
Flexural Strength (Yield, 23°C)	81.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			ASTM D256
-40°C	36	J/m	
23°C	51	J/m	
Unnotched Izod Impact			ASTM D4218
-40°C	No Break		

23°C	No Break		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	66.0	°C	
1.8 MPa, Unannealed	62.0	°C	
Vicat Softening Temperature	79.0	°C	ASTM D1525 <sup>1</sup>
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength <sup>2</sup> (23°C)	16	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
23°C, 1 kHz	3.20		
23°C, 1 MHz	3.00		
Dissipation Factor			ASTM D150
23°C, 1 kHz	8.0E-3		
23°C, 1 MHz	0.020		
Arc Resistance	155	sec	ASTM D495
Injection	Nominal Value	Unit	
Drying Temperature	150 to 160	°C	
Drying Time	4.0 to 6.0	hr	
Processing (Melt) Temp	275 to 295	°C	
Mold Temperature	10.0 to 30.0	°C	
NOTE			
1.	Loading 1 (10 N)		
2.	Method A (Short-Time)		

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