Eastar™ A150

Copolyester

Eastman Chemical Company

Message:

Eastar™ A150 Copolyester is a poly(1,4-cyclohexylene-dimethylene terephthalate/isophthalate). It is produced by reacting terephthalic acid and isophthalic acid with the glycol 1,4-cyclohexanedimethanol. Eastar™ A150 is intended primarily for extrusion into film and sheeting for packaging applications. It has excellent hydrolytic stability and good heat stability. Eastar™ A150 copolyester is lawful for use in food contact applications under food additive regulations published at 21 CFR 177.1240 by the Federal Food and Drug Administration. Therefore, it is lawful for use as a packaging material for meat or poultry foods prepared under federal inspection of the U.S. Department of Agriculture regulations at 9 CFR 318.7 and 381.147.
This product has been GREENGUARD INDOOR AIR QUALITY CERTIFIED®.
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General Information	
Features	Food Contact Acceptable
	Hydrolytically Stable
Uses	Film
	Food Packaging
	Non-specific Food Applications
	Packaging
Agency Ratings	FDA 21 CFR 177.1240
	USDA 9 CFR 318.7
	USDA 9 CFR 381.147
Forms	Pellets
Processing Method	Film Extrusion
	Sheet Extrusion

Physical	Nominal Value	Unit	Test Method
Density [1]	1.20	g/cm³	ASTM D1505
Apparent Density			ASTM D1895
Poured	0.67	g/cm³	
Vibrated	0.73	g/cm³	
Inherent Viscosity			Internal Method
23°C [2]	0.77		
23°C, 280.0 µm [3]	0.73		
Carbon Dioxide Permeability (23°C)	59	cm³·mm/m²/atm/24 hr	ASTM D1434
Tear Propagation Resistance [4]			ASTM D1938

MD : 23°C, 280.0 µm	19	kN/m	
TD : 23°C, 280.0 µm	18	kN/m	
Heat of Fusion (23°C) [5]	32.0	kJ/kg	ASTM E793
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Coefficient of Friction	0.60		ASTM D1894
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	280	µm	
Secant Modulus			ASTM D882
MD : 280 µm	1600	MPa	
TD : 280 µm	1600	MPa	
Tensile Strength			ASTM D882
MD : Yield,280 µm	43.0	MPa	
TD : Yield,280 µm	43.0	MPa	
MD : Break, 280 µm	56.0	MPa	
TD : Break, 280 µm	56.0	MPa	
Tensile Elongation			ASTM D882
MD : Yield, 280 µm	5.0	%	
TD : Yield, 280 µm	5.0	%	
MD : Break, 280 µm	250	%	
TD : Break, 280 µm	250	%	
Dart Drop Impact [6]			ASTM D1709A
-30°C, 280 µm	710	g	
-18°C, 280 µm	750	g	
23°C, 280 µm	680	g	
Elmendorf Tear Strength			ASTM D1922
MD : 280 µm	1600	g	
TD : 280 µm	1700	g	
Oxygen Permeability (23°C, 280 µm, 50% RH)	13	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D3985
Water Vapor Transmission Rate (38°C, 100% RH, 280 µm)	5.0	$g/m^2/24\ hr$	ASTM F372
Thermal	**Nominal Value**	**Unit**	**Test Method**
Glass Transition Temperature [7]	91.0	°C	ASTM D3418
Peak Melting Temperature [8]	261	°C	ASTM D3418
Specific Heat [9]			
23°C	1200	J/kg/°C	DSC
80°C	1400	J/kg/°C	DSC
100°C	1700	J/kg/°C	DMTA
200°C	1900	J/kg/°C	DSC
280°C	2200	J/kg/°C	DSC
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss (45°, 280 µm)	108		ASTM D2457
Transmittance			ASTM D1003

Total, 280 µm	93.0	%	
Regular, 280 µm	90.0	%	
Clarity (280 µm)	85.0		ASTM D1746
Haze (280 µm)	0.50	%	ASTM D1003

NOTE	
1.	Film, 280 µm
2.	EMN-A-AC-G-V-1
3.	Film, EMN-A-AC-G-V-1
4.	Split Tear Method, 254 mm/min
5.	Determined by DSC on the first heating cycle.
6.	12.7 mm dia. head, 127 mm dia. clamp, 600 mm drop
7.	Determined by DSC on the 2nd heating cycle.
8.	Determined by DSC on the 2nd heating cycle.
9.	Determined by DSC on the first heating cycle.

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