Neostar™ FN005

Copolyester Elastomer (Ether)

Eastman Chemical Company

Message:

Eastman Neostar™ Elastomer FN005 is a tough, clear, durable, general purpose grade copolyester ether. It was designed for use in the profile and automotive markets, but is also used in packaging and tubing applications where toughness and flex-crack resistance are required. Eastman Neostar™ Elastomer FN005 can be used in injection molding and cast film or tubing extrusion applications or in any application that demands strength, durability, and puncture resistance in harsh environments. This copolyester combines toughness, clarity, and flexibility without the addition of plasticizers. Eastman Neostar™ Elastomer FN005 is considered environmentally preferred because of its non-halogenated material composition. The target inherent viscosity of this product is 1.05.
This product has been CRADLE TO CRADLE CERTIFIED Silver.
The CRADLE TO CRADLE CERTIFIED Mark is a registered certification mark used under license through McDonough Braungart Design Chemistry (MBDC). MBDC is a global sustainability consulting and product certification firm. The CRADLE TO CRADLE® framework moves beyond the traditional goal of reducing the negative impacts of commerce ('eco-efficiency'), to a new paradigm of increasing its positive impacts ('eco-effectiveness'). At its core, Cradle to Cradle design perceives the safe and productive processes of nature's 'biological metabolism' as a model for developing a 'technical metabolism' flow of industrial materials. Product components can be designed for continuous recovery and reutilization as biological and technical nutrients within these metabolisms. For more information about MBDC and to obtain printable certificates for Eastman Copolyesters, visit www.mbdc.com. Choose Eastman Chemical Company under Company Name in C2C Certified products to display a list of our products.

General Information	
Features	Durable
	General Purpose
	Good Chemical Resistance
	Good Crack Resistance
	Good Dimensional Stability
	Good Flexibility
	Good Strength
	Good Toughness
	Halogen Free
	High Clarity
	High Heat Resistance
	Puncture Resistant
Uses	Automotive Applications
	General Purpose
	Packaging
	Profiles
	Tubing
Appearance	Clear/Transparent
Forms	Pellets
Processing Method	Cast Film
	Injection Molding
	Profile Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.13	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	20	g/10 min	ASTM D1238
Water Absorption (23°C, 24 hr)	0.35	%	ASTM D570
Inherent Viscosity [1] (23°C)	1.1		Internal Method
Heat of Fusion (23°C)	27.0	kJ/kg	ASTM E793
Tear Strength (23°C)	370	N	ASTM D1004
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness			ASTM D2240
Shore A, 23°C	95		
Shore D, 23°C	55		
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus (23°C)	170	MPa	ASTM D638
Tensile Strength			ASTM D638
Yield, 23°C, 3.00 mm, Injection Molded [2]	14.0	MPa	
Break, 23°C, 2.00 mm [3]	20.0	MPa	
Tensile Elongation			ASTM D638
Yield, 23°C	30	%	
Break, 23°C	300	%	
Flexural Modulus (23°C)	150	MPa	ASTM D790
Coefficient of Friction [4]	> 1.0		ASTM D1894
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	130	µm	
Secant Modulus			ASTM D882
Tangent, MD : 130 µm	185	MPa	
Tangent, TD : 130 µm	179	MPa	
Tensile Strength			ASTM D882
MD : Yield,130 µm	13.7	MPa	
TD : Yield,130 µm	13.5	MPa	
MD : Break, 130 µm	23.7	MPa	
TD : Break, 130 µm	22.6	MPa	
Tensile Elongation			ASTM D882
MD : Yield, 130 µm	26	%	
TD : Yield, 130 µm	26	%	
MD : Break, 130 µm	550	%	
TD : Break, 130 µm	550	%	
Oxygen Permeability (30°C, 130 µm)	841	cm³/m²/24 hr	ASTM D1434
Water Vapor Transmission [5]	130	g/m²/24 hr	ASTM F372
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Clash-Berg Modulus			ASTM D1043

-70°C	930	MPa	
-28°C	240	MPa	
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (-40°C)	50	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -75.0	°C	ASTM D746
Glass Transition Temperature	-3.00	°C	DSC
Vicat Softening Temperature	170	°C	ASTM D1525 [6]
Peak Melting Temperature	207	°C	ASTM D3418
Peak Crystallization Temperature (DSC)	140	°C	DSC
CLTE - Flow (23°C)	1.5E-4	cm/cm/°C	ASTM D696
Specific Heat			DSC
25°C [7]	1600	J/kg/°C	
100°C [8]	1800	J/kg/°C	
150°C [9]	2000	J/kg/°C	
175°C [10]	2300	J/kg/°C	
200°C [11]	3100	J/kg/°C	
225°C [12]	2300	J/kg/°C	
Thermal Conductivity (23°C)	0.19	W/m/K	ASTM C177

NOTE	
1.	EMN-A-AC-G-V-1
2.	Type I, 500 mm/min
3.	Type IV, 500 mm/min
4.	0.13 mm
5.	0.13 mm
6.	Loading 1 (10 N)
7.	Solid
8.	Solid
9.	Solid
10.	Solid
11.	Transition, apparent specific heat, including the effects of the heat of fusion.
12.	Melt

Recommended distributors for this material

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