

TOTAL Polyethylene EVA 1003 VN 4

Ethylene Vinyl Acetate Copolymer

TOTAL Refining & Chemicals

Message:

EVA 1003 VN 4 is made by a high pressure tubular process.

Grade for flexible films, with very high transparency and outstanding mechanical properties.

Application examples: High strength stretch film, green house film, film for food packaging (coextrusion), stretch hood.

General Information	
Additive	Antioxidation
Features	Antioxidation
	Definition, high
Uses	Films
	Stretch winding
	Food packaging
Agency Ratings	FDA Food Exposure, Not Rated
Forms	Particle
Processing Method	Blow film
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1)
	Secant Modulus vs. Strain (ISO 11403-1)
	Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Nominal Value	Unit	Test Method
Density			
--	0.935	g/cm ³	ISO 1183
--	935	kg/m ³	ISO 1183 ¹
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	0.40	g/10 min	ISO 1133
Melt volume-flow rate (190°C/2.16 kg)	0.500	cm ³ /10min	ISO 1133 ²
Vinyl Acetate Content	13.5	wt%	

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	70.0	MPa	ISO 527-2
--	80.0	MPa	ISO 527-2 ³
Tensile Stress (Yield)	6.00	MPa	ISO 527-2 ⁴
Tensile Strain (Yield)	25	%	ISO 527-2 ⁵
Tensile Elongation at Break	> 50	%	ISO 527-2 ⁶

Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	40	µm	

Tensile Stress			ISO 527-3
MD: Yield, 40 μm, blown film	6.50	MPa	ISO 527-3
TD: Yield, 40 μm, blown film	5.00	MPa	ISO 527-3
MD: Broken, 40 μm, blown film	38.0	MPa	ISO 527-3
TD: Broken, 40 μm, blown film	38.0	MPa	ISO 527-3
Tensile Elongation			ISO 527-3
MD: Broken, 40 μm, blown film	310	%	ISO 527-3
TD: Broken, 40 μm, blown film	590	%	ISO 527-3
Dart Drop Impact (40 μm, Blown Film)	650	g	ISO 7765-1
Elmendorf Tear Strength			ISO 6383-2
MD : 1.0 μm	13	N	ISO 6383-2
TD : 1.0 μm	28	N	ISO 6383-2

Thermal	Nominal Value	Unit	Test Method
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Vicat Softening Temperature			
--	74.0	°C	ISO 306
50°C/h, B (50N)	73.0	°C	ISO 306 ⁷

Melting Temperature			
--	92.0	°C	ISO 11357-3
-- ⁸	93.0	°C	ISO 11357-3 ⁹

Optical	Nominal Value	Unit	Test Method
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Haze	2.5	%	ISO 14782
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Extrusion instructions

Advised Temperature Profile: 150 to 180°C Possible Range of Thicknesses: 30 to 300 μ

NOTE

1.	?????,?? ISO 10350 ??? 23°C/50%r.h. ???
2.	?????,?? ISO 10350 ??? 23°C/50%r.h. ???
3.	?????,?? ISO 10350 ??? 23°C/50%r.h. ???
4.	?????,?? ISO 10350 ??? 23°C/50%r.h. ???
5.	?????,?? ISO 10350 ??? 23°C/50%r.h. ???
6.	?????,?? ISO 10350 ??? 23°C/50%r.h. ???
7.	?????,?? ISO 10350 ??? 23°C/50%r.h. ???
8.	10 °C/min
9.	?????,?? ISO 10350 ??? 23°C/50%r.h. ???

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