Formolene® HP4401

Formosa Plastics Corporation, U.S.A. - High Density Polyethylene

Tuesday, November 5, 2019

General Information

Product Description

Formolene® HP4401 is a high performance copolymer that is designed for the most demanding requirements of pressure pipe applications. It has good long-term hoop strength performance, very high melt strength, and outstanding toughness even at low temperatures.

Formolene® HP4401 meets all requirements of ASTM D4976 - PE 235.

When blended with the approved color concentrates, Formolene® HP4401 has a cell class of 345464C per ASTM D3350-05, is listed by PPI as a PE3608 material with HDB's of 1,600 psi @ 73°F and 800 psi @ 140°F and meets the requirements of NSF Standard 14/61 for use with potable water. Formolene® HP4401 also qualifies as a PE3408 material under the old ASTM D3350-02a and PPI standards. Formolene® HP4401 also qualifies as a PE80 material per ISO 9080.

General			
Material Status	• Commercial: Active		
Availability	• North America		
Features	• Good Melt Strength • Good Strength • Good Toughness	• Hexene Comonomer • High Density • High Strength	• Low Temperature Toughness
Uses	• Fluid Handling • Fuel Lines	• Industrial Applications • Mining Applications	• Piping • Potable Water Applications
Agency Ratings	• ASTM D3350 PE345464C • ASTM D4976-PE245 • EC 1907/2006 (REACH)	• ISO 9080 PE 80 • NSF STD-14 • NSF STD-61	• PPI PE-3408 • PPI PE-3608
Forms	• Pellets		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density			ASTM D1505
-- [2]	0.944	g/cm³	
-- [3]	0.955	g/cm³	
Melt Mass-Flow Rate			ASTM D1238
190°C/2.16 kg [4]	0.11	g/10 min	
190°C/21.6 kg [5]	12	g/10 min	
Environmental Stress-Cracking Resistance (ESCR)			
100% Igepal, Compression Molded, F50	> 1000	hr	ASTM D1693A
100% Igepal, Compression Molded, F50	> 1000	hr	ASTM D1693B
100% Igepal, Compression Molded, F50	> 1000	hr	ASTM D1693C
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength [6] (Yield, Compression Molded)	3200	psi	ASTM D638
Tensile Strength [6] (Break, Compression Molded)	5000	psi	ASTM D638
Tensile Elongation [6] (Break, Compression Molded)	> 500	%	ASTM D638
Flexural Modulus			
Compression Molded	140000	psi	ASTM D790
Compression Molded	110000	psi	ASTM D3350
Thermal	**Nominal Value**	**Unit**	**Test Method**
Brittleness Temperature	< -130	°F	ASTM D746

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Additional Information	Nominal Value	Unit	Test Method
PENT - slow crack growth	150	hr	ASTM F1473

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Natural

[3] Black

[4] MI

[5] HLMI

[6] Type IV, 2.0 in/min