


Formosa Plastics®
Formolene® HDPE

Formolene® HP3902

Natural Medium Density Hexene Copolymer

Formolene® HP3902 is a high performance hexene copolymer designed for natural gas piping systems. It has outstanding slow crack growth resistance and good long-term hoop strength. It contains a UV stabilizer.

Formolene® HP3902 meets all requirements of ASTM D4976 – PE 225

When blended with the approved yellow color concentrates, Formolene® HP3902 meets:

- A Cell class of 234373E and 234375E per ASTM D3350
- The Plastic Pipe Institute (PPI) Certification of a PE2708 and PE80 resin per the protocol in TR-3
- The Canadian Standards Association CSA-B137.4 Standard for polyethylene piping systems for gas service
- The National Sanitation Foundation (NSF) Standard 14 for plastic piping systems components and materials

Suggested Applications:

- Gas Distribution Pipe
- Oilfield and Other Industrial Piping Systems

Nominal Physical Properties:

PROPERTY* (Natural Resin)	ASTM TEST METHOD	ENGLISH		SI	
		Unit	Value	Unit	Value
Density	D1505	g/cc	0.939	g/cc	0.939
Melt Index,					
Condition E, 190°C/2.16 kg (MI)	D1238	g/10 min.	0.20	g/10 min.	0.20
Condition F, 190°C/21.6 kg (HLMI)		g/10 min.	20.0	g/10 min.	20.0
Tensile Yield Strength,					
@ Yield	D638	psi.	2800	MPa	19
@ Break	Type IV	psi.	4800	MPa	33
2" (50 mm) per min.					
Ultimate Elongation,	D638				
2" (50 mm) per min.	Type IV	%	>500	%	>500
Flexural Modulus	D3350	psi.	90,000	MPa	620
	D790	psi.	110,000	MPa	760
Brittleness Temperature	D746	°F	<-130	°C	<-90
Pent Slow Crack Growth	F1473	h	>1000	h	>1000
PIPE PROPERTIES **					
Hydrostatic Design Basis, 73°F (23°C)	PPI TR3	psi.	1,250	MPa	8.6
Hydrostatic Design Basis, 140°F (60°C)	PPI TR3	psi.	800	MPa	5.5
Minimum Required Strength 68°F (20°C)	ISO 9080	psi.	1,160	MPa	8.0

* Physical properties reported herein were determined on compression molded specimens prepared in accordance with Procedure C of ASTM D1928.

** The pipe properties were determined on pipe samples extruded using various approved yellow and black concentrate

The nominal properties reported herein are typical of the product but do not reflect normal testing variance and therefore should not be used for specification purposes.

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