



ADVANCENE™ bEE-4906-AAH

ETHYDCO - High Density (HMW) Polyethylene

General Information

Product Description

ADVANCENE™ bEE-4906-AAH is a thermally stabilized bimodal high molecular weight high density polyethylene - hexene copolymer, produced using advanced gas phase PE process in a single reactor. It is intended for use in PE-100 pipe applications where the highest standards of long term hydrostatic strength and resistance to slow crack growth are required. These high performance pipes can be used at higher pipeline operating pressures and have a potential to down-gauge. ADVANCENE™ bEE-4906-AAH has good processability with a high specific output (kg/hr/rpm), exceptional melt strength with very Low Sag, and good fusion compatibility. It is very suitable for large diameter and thick wall pipe but also for small diameter pipes.

Main Characteristics:

- Natural gas distribution pipes (ISO 4437).
- Large diameter industrial piping.
- Mining, sewage, and municipal water service lines (ISO 12201, ISO 4427).

Complies with:

- ISO 12162: PE-1DD.
- Russia: Gost 18599 and Gost1 6388.
- Australia, New Zealand: All NZS 4130.

General

Additive	• Heat Stabilizer		
Features	• Bimodal Molecular Weight Distribution • Copolymer • Good Processability	• Heat Stabilized • Hexene Copolymer • High Density	• High Melt Strength • High Molecular Weight • Recyclable Material
Uses	• Piping		
Agency Ratings	• ISO 12162 PE 100		
Processing Method	• Pipe Extrusion		

Properties ¹

Physical	Typical Value (English)	Typical Value (SI)	Test Method
Density	0.949 g/cm ³	0.949 g/cm ³	ASTM D1505
Melt Mass-Flow Rate (MFR)			ASTM D1238 ISO 1133
190°C/21.6 kg	6.0 g/10 min	6.0 g/10 min	
190°C/5.0 kg	0.20 g/10 min	0.20 g/10 min	
Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
Tensile Strength			ASTM D638 ISO 527-2
Yield	3480 psi	24.0 MPa	
Break	3770 psi	26.0 MPa	
Tensile Elongation (Break)	500 %	500 %	ASTM D638 ISO 527-2
Flexural Modulus - 2% Secant	145000 psi	1000 MPa	ASTM D790B ISO 178

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Mechanical	Typical Value (English)	Typical Value (SI)	Test Method
PENT (176°F (80.0°C), 435 psi (3.00 MPa))	> 1000 hr	> 1000 hr	ASTM F1473
Creep Rupture Strength ²	> 200 hr	> 200 hr	
Resistance to Rapid Crack Propagation, Pc ³	> 145 psi	> 10.0 bar	
Slow Crack Growth Resistance ³	> 1000 hr	> 1000 hr	ISO 13479
Additional Information	Typical Value (English)	Typical Value (SI)	Test Method
Designation	PE-100	PE-100	ISO 12162
Minimum Required Strength	> 1450 psi	> 10.0 MPa	ISO 9080

Processing Information

Extrusion	Typical Value (English)	Typical Value (SI)
Suggested Max Moisture	0.030 %	0.030 %
Cylinder Zone 1 Temp.	374 to 410 °F	190 to 210 °C
Cylinder Zone 3 Temp.	374 to 410 °F	190 to 210 °C
Cylinder Zone 5 Temp.	374 to 410 °F	190 to 210 °C
Melt Temperature	392 to 428 °F	200 to 220 °C
Die Temperature	392 to 419 °F	200 to 215 °C