

## ADVANCENE™ bEE-4906-AAH

*Bimodal High Molecular Weight  
High Density Polyethylene Resin*

### Overview :

ADVANCENE™ bEE-4906-AAH is a thermally stabilized bimodal high molecular weight high density polyethylene - hexene copolymer, produced using the UNIPOL™ 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 desired. 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-100.
- Russia: Gost 18599 and Gost 16388.
- Australia, New Zealand: AZ/ NZS 4130.

Physical (Virgin Material)	Nominal Value (SI)	Test Method
Density	0.949 g/cm <sup>3</sup>	ASTM D1505
<b>Melt Index</b>		
(190°C/5 kg)	0.2 g/10min	ASTM D1238, ISO 1133
(190°C/21.6 kg)	6.0 g/10min	
Mechanical (Virgin Material)	Nominal Value (SI)	Test Method
<b>Tensile Strength</b>		
Yield	24 MPa	ASTM D638 <sup>1</sup> , ISO 527
Break	26 MPa	
<b>Tensile Elongation</b>		ASTM D638 <sup>1</sup> , ISO 527
Break	500 %	
Flexural Modulus – 2% Secant	1000 MPa	ASTM D790B <sup>1</sup> , ISO 178
Pipe Properties (UHXP – 4808 +2.25% Black)	Nominal Value (SI)	Test Method
Designation	PE-100	ISO 12162
Minimum Required Strength	>10 Mpa	ISO 9080
Creep Rupture Strength	>200 hrs	Note <sup>3</sup>
Slow Crack Growth Resistance <sup>2</sup>	>1000 hrs	ISO 13479
PENT (slow crack growth; 80°C, 3.0 MPa)	>1000 hrs	ASTM F1473
Resistance to Rapid Crack Propagation <sup>2</sup> , P <sub>c</sub>	>10 bar	

## Pipe Extrusion Conditions

Typical extruders have (cooled) grooved barrels and barrier screws with a LD ratio ca 30. Pellets should be dried to below 300 ppm moisture before use. Barrel temperatures: 190 – 210°C. Head and Die temperatures: 200 – 215°C. Melt temperature: 200 – 220°C.

## Notes :

- 1 Molded and tested in accordance with ASTM D4976.
- 2 Tested on 110mm SDR11 pipe.
- 3 Pressure test at 20°C and 12.4 MPa

## AVAILABILITY :

This product is supplied in 25 kg bags in secured pallets of 60 bags (1.500 MT net). It is also supplied in jumbo bags of 1000 kg capacity.

## STORAGE :

The product should be stored in dry conditions at temperatures below 50°C and protected from UV-light. Improper storage can initiate degradation, which results in odour generation and colour changes and can have negative effects on the physical properties of this product.

More information on storage can be found in Safety Information Sheet for this product.

## SAFETY :

The product is not classified as a hazardous mixture.

Dust and fines from the product carry a risk of dust explosion. All equipment should be properly earthed. Inhalation of dust should be avoided as it may cause irritation of the respiratory system. Small amounts of fumes are generated during processing of the product. Proper ventilation is therefore required.

A Safety Information Sheet is available on request. Please contact your ETHYDCO representative for more details on various aspects of safety, recovery and disposal of the product.

## RECYCLING :

The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

## RELATED DOCUMENTS :

Most datasheets and statements are available on ETHYDCO website [www.ethydc0-eg.com](http://www.ethydc0-eg.com). If more information is required, please contact a ETHYDCO representative for information.

## DISCLAIMER :

**The product(s) mentioned herein are not intended to be used for medical, pharmaceutical or healthcare applications and we do not support their use for such applications.**

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however we do not assume any liability whatsoever for the accuracy and completeness of such information.

**ETHYDCO makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.**

**It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.**

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