

ADVANCENE™ bEEB-5906-AAH

*Black Bimodal High Molecular Weight
High Density Polyethylene Resin*

Overview:

ADVANCENE™ bEEB-5906-AAH is a black compounded 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 desired. These high-performance pipes can be used at higher pipeline operating pressures and have a potential to down-gauge. ADVANCENE™ bEEB-5906-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 black.

| Physical (Compounded Material) | Nominal Value (SI) | Test Method |
|--|-------------------------|-------------------------------------|
| Density | 0.959 g/cm ³ | ASTM D1505, ISO1183 |
| Melt Index (190°C/5 kg) | 0.19 g/10 min | ASTM D1238, ISO 1133-1 ¹ |
| Melt Index (190°C/21.6 kg) | 6 g/10 min | |
| Mechanical (Compounded Material) | Nominal Value (SI) | Test Method |
| Tensile Strength | | |
| Yield | 22 MPa | ASTM D638 ² , ISO 527 |
| Break | 32 MPa | |
| Tensile Elongation | | |
| Break | 680% | ASTM D638 ² , ISO 527 |
| Charpy Impact Strength | | |
| AT 23 °C | 5.41 J/cm | ASTM D6110, ISO 179 |
| AT -30 °C | 2.31 J/cm | |
| Brittleness Temperature | <60 °C | ASTM D746, ISO 974 |
| OIT (at 210°C) | > 20 min | ISO 11357-6 |
| Carbon Black Content (Grade) | ≥ 2% | ASTM D1603, ISO 6964 ³ |
| Carbon Dispersion (Grade) | ≤ 3 | ISO 18553 |
| Carbon Dispersion (Rate) | A1 | ISO 18553 |
| Hardness Shore D | 63 | ASTM D2240, ISO 868 |
| Moisture Content | <300 PPM | ISO 15512 |
| Pipe Properties | Nominal Value (SI) | Test Method |
| Designation | PE-100 Black | ISO 12162 |
| Minimum Required Strength | >10 MPa | ISO 9080 |
| Creep Rupture Strength | >200 hrs | Note 5 |
| Slow Crack Growth Resistance ⁴ (80°C, 0.92 MPa) | ≥1000 hrs | ISO 13479 |
| Resistance to Rapid Crack Propagation ⁴ , Pc | ≥ 25.0 bar | ISO 13477 |

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.

Due to the hygroscopic nature of carbon black, this compound is sensitive to moisture. Storage for a long time or under unfavorable conditions will increase the moisture content. For normal conditions and applications, we recommend preheating and drying for minimum 1 hour with a maximum preheat temperature of 90°C

Notes:

- 1 Method B
- 2 Molded and tested in accordance with ASTM D4976
- 3 method A
- 4 Tested on 110mm SDR11 pipe.
- 5 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. 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 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.

No liability can be accepted in respect of the use of ETHYDCO products in conjunction with other materials. The information contained herein relates exclusively to our products when not used in conjunction with any third-party materials.

ADVANCENE™ is a trademark of ETHYDCO.