

**Technical Data Sheet**

Technical Equivalent to SABIC P6006AD / PE 100 HDPE for Potable Water & Gas Pressure Pipes

High-Density Polyethylene (HDPE) PE 100 –

For Potable Water & Natural Gas Pressure Pipes (Pre-Compounded with 2.25% Carbon Black)

**Regulatory Status**

For regulatory compliance information, refer to the BGT AQUA BLACK™ Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).

This grade is formulated for pressure pipe applications, including potable water distribution and natural gas distribution systems.

Approved for use in accordance with ISO 4427 (water) and ISO 4437 (gas).

**Not intended for medical or pharmaceutical applications.**

**Status**

Commercial: Active

**Availability**

Middle East, India, Turkey, Central Asia, Africa

Strategic stock available in Jebel Ali Free Zone (UAE)

**Application**

Potable Water Pressure Pipes, Natural Gas Distribution Pipes (pre-compounded), Industrial Process Water Lines

**Market**

Municipal Water Networks, Rural Water Schemes, Gas Utility Infrastructure, Industrial Fluid Systems

**Processing Method**

Pipe Extrusion (Single- or Twin-Screw)

**Attribute**

PE 100 HDPE, MRS = 10 MPa, Environmental Stress Crack Resistance (ESCR >1000 h, ASTM D1693), Melt Flow Rate = 0.23 g/10 min, Density = 0.959 g/cm³, Pre-Compounded Black with 2.25% Carbon Black, Fully Compatible with ISO 4427 (Water) and ISO 4437 (Gas)

Physical			
Property	Nomical Value	Units	Test Method
Melt Flow Rate (190 °C / 5.0 kg)	0.23	g/10 min	ISO 1133-1
Melt Flow Rate (190 °C / 21.6 kg)	6.4	g/10 min	ISO 1133-1
Density	0.959	g/cm³	ISO 1183-1
Bulk Density	580	kg/m³	ISO 60

Mechanical			
Property	Nomical Value	Units	Test Method
Tensile Strength at Yield (23 °C)	23	MPa	ISO 527-1,-2
Tensile Elongation at Break (23 °C)	>350	%	ISO 527-1,-2
Tensile Modulus	900	MPa	ISO 527-1,-2
Tensile Creep Modulus (100 h)	360	MPa	ISO 527-2

Long-Term Performance			
Property	Nomical Value	Units	Test Method
Minimum Required Strength	10	MPa	ISO 9080
Hydrostatic Strength (20 °C /	10	MPa	ISO 9080
Environmental Stress Crack	>1000	h	ASTM D1693
Oxidation Induction Time	>30	min	ISO 11357-6

Impact			
<b>Property</b>	<b>Nomical Value</b>	<b>Units</b>	<b>Test Method</b>
<i>Charpy Impact Strength – Notched (23 °C)</i>	26	kJ/m <sup>2</sup>	ISO 179-1/1eA
<i>Charpy Impact Strength – Notched (-30 °C)</i>	14	kJ/m <sup>2</sup>	ISO 179-1/1eA

Thermal			
<b>Property</b>	<b>Nomical Value</b>	<b>Units</b>	<b>Test Method</b>
<i>Vicat Softening Temperature</i>	74	°C	ISO 306
<i>DSC Melting Point</i>	130	°C	DSC

Additive			
<b>Property</b>	<b>Nomical Value</b>	<b>Units</b>	<b>Test Method</b>
<i>Carbon Black Content</i>	2.25	%	ISO 6964
<i>Pigmentation</i>	Jet Black (RAL 9004)	—	Visual

## Product Description

### Product Description

BGT AQUA BLACK™ is a PE 100 high-density polyethylene compound, engineered as a high-performance equivalent to SABIC P6006AD. With a certified Minimum Required Strength (MRS) of 10.0 MPa, outstanding Environmental Stress Crack Resistance (ESCR >1000 h, ASTM D1693), and high oxidative stability (OIT >30 min, ISO 11357-6), it delivers reliable long-term hydrostatic performance for critical water and gas infrastructure. Pre-compounded with 2.25% high-dispersion carbon black and pigmented jet black (RAL 9004), it meets ISO 4427 (water) and ISO 4437 (gas) requirements out of the bag—no masterbatch blending needed. Optimized for standard PE 100 extrusion lines, BGT AQUA BLACK™ provides a certification-ready, regionally supported solution for pipe manufacturers across the Middle East, Africa, and Asia—without unverifiable claims or technical overstatement.

## Availability & Technical Support

For availability, technical information, and application-specific guidance, please contact Britannia Gulfgate Trade (BGT).

### Processing Techniques

- Melt Temperature Range: 200–225 °C
- Screw Type: Standard barrier screw or general-purpose HDPE screw ( $L/D \geq 25:1$ )
- Drying: Not required if stored properly (max. moisture <300 ppm); if exposed to high humidity, dry at 70 °C for 2–4 hours
- Cooling: Controlled water bath (10–20 °C) with gradual temperature reduction to minimize internal stresses
- Line Speed & Calibration: Optimize for dimensional stability per ISO 4427 or ISO 4437
- Note: No additional carbon black or pigment required—UV stabilization and color consistency are built-in

The resin exhibits excellent melt homogeneity, stable output, and smooth surface finish—critical for pressure pipe integrity and certification.

## Availability & Technical Support

For availability, technical information, and application-specific guidance, please contact Britannia Gulfgate Trade (BGT).

### Health & Safety

BGT AQUA BLACK™ is a non-hazardous thermoplastic in pellet form.

- Inhalation: Low risk; minimize dust generation.
- Skin/Eye Contact: May cause mild mechanical irritation; wash with water.
- Ingestion: Not intended for human consumption.
- Fire Hazard: Combustible solid. In fire, emits CO, CO<sub>2</sub>, and hydrocarbons. Use water spray, dry chemical, or CO<sub>2</sub> extinguishers.
- Regulatory: Complies with REACH and GHS (not classified as hazardous).
- SDS: Available upon request.

 Contains no intentionally added heavy metals, phthalates, or SVHCs above threshold limits.

### Storage & Handling

- Store in dry, cool, well-ventilated area (<40 °C), away from sunlight and heat.
- Keep bags sealed until use to prevent moisture absorption.
- Use clean, dedicated equipment to avoid cross-contamination.
- Store on clean, dry pallets; protect from dust, rain, and mechanical damage.
- Shelf life: 24 months under recommended conditions.
- Do not store near oxidizing agents, acids, or flammable materials.

 All shipments include Lot No. and Certificate of Analysis (CoA).



## BGT Royalty™ Commitment

### BGT Royalty™ Commitment (A Technical Partnership – Not a Warranty)

BGT AQUA BLACK™ is supplied as a certifiable, pre-compounded PE 100 HDPE black compound—engineered for pipe manufacturers serving municipal water and gas utilities across emerging markets.

#### What Sets Us Apart

##### 1. Ready-to-Extrude, Certification-Ready

Pre-formulated with 2.25% carbon black and jet black pigment (RAL 9004)—fully compliant with ISO 4427 and ISO 4437 without further compounding.

##### 2. Transparent Batch Documentation

Every shipment includes a Certificate of Analysis (CoA) with verified data for:

- MFR (0.23 g/10 min)
- Density (0.959 g/cm³)
- ESCR (>1000 h, ASTM D1693)
- OIT (>30 min, ISO 11357-6)
- Carbon black content (2.25%, ISO 6964)

##### 3. No FNCT, No Guesswork

We do not declare FNCT (ISO 16770)—as it is not routinely certifiable in our region. All claims are limited to regionally accessible, accredited test methods.

##### 4. Direct Regional Support

Polymer engineers respond within your working day—no call centers, no time-zone delays.

##### 5. Jebel Ali Ready Stock

Available from bonded inventory in Jebel Ali Free Zone—ensuring rapid, traceable delivery for time-critical projects.

The BGT Royalty™ Commitment is a service pledge. It does not constitute a warranty. Final pipe certification, hygiene compliance, and regulatory approval remain the sole responsibility of the pipe manufacturer.



## ⚠ Disclaimer

The data presented in this document are based on standard laboratory testing and represent typical values for BGT AQUA BLACK™. These values are not guaranteed specifications and do not constitute a warranty of merchantability or fitness for a particular purpose.

This grade is formulated to meet performance indicators for PE 100-class resins. Long-term hydrostatic strength is validated per ISO 9080 (MRS = 10 MPa). Environmental stress crack resistance is assessed per ASTM D1693 (ESCR >1000 h). FNCT (ISO 16770) testing is not performed by Britannia GulfGate Trade, nor is it routinely available through accredited laboratories in the region.

Final pipe certification—including compliance with ISO 4427 (water) or ISO 4437 (gas), structural integrity under site-specific conditions, and suitability for potable water or gas distribution—remains the sole responsibility of the pipe manufacturer.

Britannia GulfGate Trade makes no express or implied warranties except as expressly stated in a written supply agreement.

*Contact us* for further inquiries



Britannia GulfGate Trade  
Engineering Trust in Infrastructure Polymers

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