HDPE 6100

Technical Data Sheet	PTC PRESSURE BLUE™
High-Density Polyethylene (HDPE) PE 100 –	For Pressure Pipe Applications (Water & Gas)

Regulatory Status
For regulatory compliance information, refer to the PTC PRESSURE BLUE™ 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**.

- For gas applications, final product must contain 2.0–2.5% carbon black and be pigmented orange (RAL 1033) during pipe extrusion.

Status

Commercial: Active

Availability

Middle East, India, Turkey, Central Asia, Africa

Application
Potable Water Pressure Pipes, Natural Gas Distribution Pipes (with pigment & carbon black adjustment)

Market
Municipal Water Networks, Rural Water Supply, Gas Utility Infrastructure, Industrial Process Water

Processing Method
Pipe Extrusion (Single- or Twin-Screw, Bimodal-Compatible)

Attribute
Bimodal PE 100 HDPE, MRS = 10 MPa, Exceptional Environmental Stress Crack Resistance (ESCR >10,000 h), High Impact Strength, Optimized for Potable Water (Blue) and Gas (Orange-Convertible), Full Compatibility with ISO 4427 (Water) and ISO 4437 (Gas), 0.952 g/cm^3 Density, Ultra-Low Melt Flow Rate for Long-Term Pressure Integrity

Typical Properties
Physical

Property	Nominal Value	Units	Test Method
Melt Flow Rate (190 °C / 5.0 kg)	0.052	g/10 min	ISO 1133-1
Density	0.952	g/cm³	ISO 1183-1
Bulk Density	520	kg/m³	ISO 60

Mechanical

Property	Nominal Value	Units	Test Method
Tensile Modulus (23 °C)	950	MPa	ISO 527-1,-2
Tensile Stress at Yield (23 °C, 50 mm/min)	22	MPa	ISO 527-1,-2
Tensile Strain at Break (23 °C)	≥500	%	ISO 527-1,-2
Tensile Strain at Yield (23 °C, 50 mm/min)	10	%	ISO 527-1,-2

Long-Term Performance

Property	Nominal Value	Units	Test Method
Minimum Required Strength (MRS)	10	MPa	ISO 9080
Hydrostatic Strength (20 °C / 50 years)	10	MPa	ISO 9080
ESCR (F50) >1000 h — ASTM D1693	>1000	h	ASTM D1693
Environmental Stress Crack Resistance (ESCR)	>1000	h	ISO 16739 (Bell)
Oxidation Induction Time (210 °C)	35	min	ISO 11357-6

Impact

Property	Nominal Value	Units	Test Method
Charpy Impact Strength – Notched (23 °C)	85	kJ/m²	ISO 179-1/1eA
Charpy Impact Strength – Notched (–30 °C)	50	kJ/m²	ISO 179-1/1eA

💡 These very high impact values reflect the toughness of bimodal PE 100 — essential for pipe handling, installation, and resistance to ground movement or accidental impact.

Additive

Property	Nominal Value	Units	Test Method
Pigmentation	Natural (Unpigmented)	—	Visual
Note	For water pipes: add blue pigment	—	—

Product Description

Product Description

PTC PRESSURE BLUE™ is a bimodal PE 100 high-density polyethylene base resin, designed for pressure pipe applications in water and gas infrastructure. With an MRS of 10.0 MPa and ESCR exceeding 10,000 hours, it delivers the long-term hydrostatic strength and crack resistance demanded by ISO 4427 (water) and ISO 4437 (gas). Supplied as an unpigmented base, it enables pipe manufacturers to precisely formulate final color and carbon black content—blue (RAL 5015) for potable water or orange (RAL 1033) with 2.25% carbon black for gas distribution. Formulated for seamless integration into standard PE 100 extrusion lines, PTC PRESSURE BLUE™ offers a reliable, regionally supported alternative to global grades.

Availability & Technical Support

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

Processing Techniques

Recommended melt temperature range: 190 °C to 230 °C (typical operating window: 200–220 °C).

For PE 100 pressure pipe extrusion:

- Screw: Use a high-compression, low-shear barrier screw or bimodal-specific screw design to minimize degradation and ensure uniform melting
- Drying: Dry at 70 °C for 4 hours if moisture exceeds 200 ppm (recommended max. moisture: 150 ppm)
- Cooling: Gradual, controlled water bath cooling to minimize internal stresses and optimize long-term hydrostatic performance
- Pigmentation: Pre-compound blue (RAL 5015) or orange (RAL 1033 + 2.25% carbon black) masterbatch at 3–5% loading for final pipe color

Optimize line speed and vacuum calibration to help achieve dimensional consistency aligned with typical requirements of ISO 4427 and ISO 4437.

Availability & Technical Support

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

REGULATORY & COMPLIANCE INFORMATION

Health and Safety

Molten HDPE may release fumes if overheated or exposed to excessive oxygen. Ensure adequate ventilation in processing areas. Avoid skin or eye contact with hot polymer. Use heat-resistant gloves, safety glasses, and protective clothing.

If overheated or exposed to air, molten polymer may degrade, producing fumes that can cause irritation to eyes or respiratory tract. Ensure adequate ventilation.

The resin is flammable and may produce dense smoke if burned. Store away from ignition sources.

Always consult the Safety Data Sheet (SDS) before handling or processing PTC PRESSURE BLUE™.

Storage

Supplied in 25 kg UV-protected polyethylene bags on pallets.
Store in a dry, cool, and well-ventilated area, below 40 °C, away from direct sunlight, heat sources, and moisture.
Shelf life: 24 months under recommended conditions.
Keep separate from oxidizing agents and flammable materials.

BGT Royalty™ Commitment

✅ Britannia GulfGate Trade PE 100 Assurance Framework™
(A Technical Partnership – Not a Warranty)

At Britannia GulfGate Trade, PTC PRESSURE BLUE™ is supplied as a certifiable PE 100 base resin for critical water and gas infrastructure — backed by transparency, regional readiness, and technical clarity.

What Sets Us Apart

1. Certification-Ready Data
Every batch includes a Certificate of Analysis (CoA) with actual MFR, density, and ESCR-relevant parameters — giving your certifier the data they need for ISO 4427 or ISO 4437 type approval.

2. Unpigmented Base = Full Control
We supply a clean, unpigmented base resin, so you control final pigment (blue/orange) and carbon black — ensuring exact compliance with local gas or water regulations.

3. Direct Technical Dialogue
No call centers. No time-zone delays. Our polymer specialists respond within your working day — because pipe certification can't wait.

4. Jebel Ali Availability
Stocked in bonded inventory at Jebel Ali Free Zone, enabling fast, duty-optimized delivery across the Middle East, Africa, and South Asia — with full batch traceability.

The Britannia GulfGate Trade PE 100 Assurance Framework™ is a service commitment. It does not constitute a warranty, nor does it replace ISO 4427 or ISO 4437 certification, which remain the sole responsibility of the pipe manufacturer.

⚠️ Disclaimer

Disclaimer
The data presented in this document are based on standard laboratory testing and represent typical values for PTC PRESSURE BLUE™. These values are not to be interpreted as guaranteed specifications and do not constitute a warranty of merchantability or fitness for a particular purpose.

Final pipe performance—including compliance with ISO 4427 (water) or ISO 4437 (gas)—depends on processing conditions, pigment and carbon black addition, pipe design, installation, and service environment. Users are solely responsible for verifying suitability for their specific application and obtaining necessary certifications from accredited pipe testing laboratories.

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

Contact us for further inquiries

PERSIA TRADE CONSURTIUM

Britannia GulfGate Trade
Engineering Trust in Infrastructure Polymers

For technical inquiries, batch documentation, or regional support:
✉️ petercascolne@outlook.com
🌐 website, www.britanniagulfgate.trade