PTC INFRA BLACK™

Technical Data Sheet	PTC INFRA BLACK™ (Technical Equivalent to YUHWA P600BL / PE 100 HDPE Black)
High-Density Polyethylene (HDPE) PE 100 –	For Potable Water & Gas Pressure Pipes (Buried)

Regulatory Status

For regulatory compliance information, refer to the PTC 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.
This grade is not intended for medical or pharmaceutical applications.

Status

Commercial: Active

Availability

Middle East, India, Turkey, Central Asia, Africa

Application

Potable Water Pressure Pipes, Natural Gas Distribution Pipes

Market

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

Processing Method

Pipe Extrusion (Single- or Twin-Screw)

Attribute

- PE 100 HDPE, MRS = 10 MPa, Excellent Creep Resistance, Slow Crack Growth (SCG) Resistance, Rapid Crack Propagation (RCP) Resistance, Carbon Black Content = 2.3%, Jet Black Pigmentation (RAL 9004), Fully Compatible with ISO 4427 (Water) and ISO 4437 (Gas)

Physical

Property	Nominal Value	Units	Test Method
Melt Flow Rate (190 °C / 5.0 kg)	0.23	g/10 min	ISO 1133-1
Density	0.961	g/cm³	ISO 1183-1
Bulk Density	520	kg/m³	ISO 60

Mechanical

Property	Nominal Value	Units	Test Method
Tensile Modulus (23 °C)	930	MPa	ISO 527-1,-2
Tensile Stress at Yield (23 °C, 50	22.5	MPa	ISO 527-1,-2
Tensile Strain at Break (23 °C)	≥600	%	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**
Oxidation Induction Time (200 °C)	**>60**	**min**	**ISO 11357-6**
Oxidation Induction Time (210 °C)	**30**	**min**	**ISO 11357-6**
ESCR (F50)	**>1000**	**h**	**ASTM D1693**
Hydrostatic Strength (20 °C / 100 h)	**12.4**	**MPa**	**ISO 1167**

Hardness

Property	Nominal Value	Units	Test Method
Shore Hardness (Shore D)	62	—	ISO 868

Thermal

Property	Nominal Value	Units	Test Method
Vicat Softening Temperature	75	°C	ISO 306
DSC Melting Point	130	°C	DSC

Additive

Property	Nominal Value	Units	Test Method
Carbon Black Content	2.30%	%	ISO 6964
Carbon Black Dispersion	Class 2 (Excellent)	—	ISO 18553
Pigmentation	Jet Black (RAL 9004), UV-	—	Visual

Product Description

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PTC INFRA BLACK™ is a ready-to-extrude, UV-stabilized PE 100 HDPE grade, engineered as a direct, ISO-aligned alternative to YUHWA HIDEN® P600BL. Formulated with **2.3% high-dispersion carbon black** and **jet black pigmentation (RAL 9004)**, it is pre-stabilized for **buried and exposed pressure pipe applications** in potable water and natural gas networks. Fully compliant with **ISO 4427** and **ISO 4437**, it eliminates the need for post-addition of carbon black or masterbatch — ensuring consistent UV protection, processing simplicity, and certification readiness. Designed for municipal and utility infrastructure with service lives exceeding 50 years, PTC INFRA BLACK™ combines global performance standards with regional technical support from Britannia GulfGate Trade.

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 black pipe extrusion:
- **Screw**: Standard barrier screw for HDPE — no special design required
- **Drying**: Not required if stored properly; optional drying at **70 °C for 2 hours** if exposed to humidity (max. moisture: 200 ppm)
- **Cooling**: Standard water bath calibration — rapid quenching is acceptable due to carbon black's thermal conductivity
- **Note**: **No masterbatch addition needed** — carbon black and jet black pigment are pre-dispersed for immediate extrusion

Optimize line speed and vacuum calibration to meet dimensional tolerances per **ISO 4427** (water) or **ISO 4437** (gas). The pre-stabilized formulation ensures consistent UV protection without post-blending.

Availability & Technical Support

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

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, 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 INFRA BLACK™.

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 Black Grade Commitment™
(A Technical Partnership – Not a Warranty)

At Britannia GulfGate Trade, PTC INFRA BLACK™ is supplied as a certifiable, pre-stabilized PE 100 HDPE grade — engineered for pipe manufacturers who require reliability without formulation complexity in buried water and gas infrastructure.

What Sets Us Apart

1. Ready-to-Extrude Formulation
Contains 2.3% high-dispersion carbon black (ISO 18553 Class 2) and jet black pigmentation (RAL 9004) — eliminating the need for masterbatch addition and ensuring consistent UV protection across all production batches.

2. Certification-Ready Batch Data
Every shipment includes a Certificate of Analysis (CoA) with actual MFR, density, oxidation induction time, and carbon black content — providing traceable, ISO-aligned data accepted by certifiers under ISO 4427 and ISO 4437.

3. ISO-Aligned, Not ASTM-Limited
All performance claims and test methods are referenced to ISO standards — the certification language of Europe, the Middle East, Africa, and Asia — ensuring seamless integration into regional approval processes.

4. Direct Technical Access
No call centers. No time-zone delays. Our polymer specialists respond within your working day — because infrastructure projects can't wait.

5. Jebel Ali Ready Stock
Available from bonded inventory in Jebel Ali Free Zone — enabling fast, duty-optimized delivery with full batch traceability across your operational region.

The Britannia GulfGate Trade PE 100 Black Grade Commitment™ is a service pledge. It does not constitute a warranty of any kind, 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 INFRA BLACK™. 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, 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.
This grade is formulated to meet PE 100 performance indicators. Final MRS classification per ISO 9080 and long-term hydrostatic validation remain the sole responsibility of the pipe manufacturer."

Contact us for further inquiries

Britannia GulfGate Trade
Engineering Trust in Infrastructure Polymers

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