PTC INFRA MAX SLOW™

Technical Data Sheet	(Technical Alternative to Lotte M7100 / PE 100 HDPE for Ultra-Large Diameter Pipes)
High-Density Polyethylene (HDPE) PE 100	For Water Transmission, Outfall & Industrial Mega-Pipes (DN ≥ 800 mm)

Regulatory Status
For regulatory compliance information, refer to the PTC INFRA MAX SLOW™ Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).
This grade is formulated for **large-diameter pressure pipe applications** in water transmission, industrial outfall, and mining slurry.
Contains **2.3% carbon black** for UV protection — suitable for **buried and exposed installations**.
This grade is not intended for medical or pharmaceutical applications.

Status
Commercial: Active

Availability
Middle East, India, Turkey, Central Asia, Africa

Application
Very Large-Diameter Water Mains (DN 800–2000 mm), Industrial Outfall Lines, Mining Slurry Pipes, Thick-Wall Pressure Pipes

Market
National Water Authorities, Desalination Plants, Mining Operators, Mega Infrastructure Projects

Processing Method
Very Large-Diameter Pipe Extrusion (Low-Speed, High-Torque Lines)

Attribute
- PE 100 HDPE Black Compound, MRS = 10 MPa, Ultra-Low Melt Flow Rate = 0.08 g/10 min (5.0 kg), High Stiffness (Tensile Modulus = 940 MPa), Excellent Slow Crack Growth Resistance (FNCT >5000 h), Carbon Black Content = 2.3%, Jet Black (RAL 9004), Full Compliance with ISO 4427, Optimized for DN ⩾ 800 mm Pipes

Physical

Property	Nominal Value	Units	Test Method
Melt Flow Rate (190 °C / 5.0 kg)	0.08	g/10 min	ISO 1133-1
Density	0.952	g/cm³	ISO 1183-1
Bulk Density	510	kg/m³	ISO 60

Mechanical

Property	Nominal Value	Units	Test Method
Tensile Modulus (23 °C)	940	MPa	ISO 527-1,-2
Tensile Stress at Yield (23 °C, 50	21.5	MPa	ISO 527-1,-2
Tensile Strain at Break (23 °C)	≥700	%	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 (210 °C)	32	min	ISO 11357-6
Oxidation Induction Time (210 °C)	32	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
Vicat Softening Temperature	76	°C	ISO 306
DSC Melting Point	130	°C	DSC

Thermal

Property	Nominal Value	Units	Test Method
Shore Hardness (Shore D, 3 s)	61	—	ISO 868

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

✍️ Product Description

PTC INFRA MAX SLOW™ is a next-generation, ultra-low MFR PE 100 HDPE black compound, engineered as a high-integrity, ISO-aligned evolution beyond legacy grades like Lotte M7100. Precision-formulated for very large-diameter pressure pipes (DN 800–2000 mm) in critical applications—including national water transmission mains, desalination outfall lines, and mining slurry systems—it delivers outstanding sag resistance, high stiffness (940 MPa), and robust long-term durability under demanding mechanical and environmental conditions.

Pre-compounded with 2.3% high-dispersion carbon black and jet black pigmentation (RAL 9004), it provides consistent UV stability for both buried and exposed mega-pipe installations—eliminating the need for post-additive blending. Fully aligned with ISO 4427, PTC INFRA MAX SLOW™ empowers infrastructure developers to design thinner-walled, higher-pressure, and longer-life pipelines, backed by batch-specific Certificates of Analysis and responsive technical partnership 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: **200 °C to 230 °C** (typical operating window: 210–225 °C).

For ultra-large-diameter PE 100 pipe extrusion (DN ⩾ 800 mm):

- **Screw**: Use a **low-shear, high-compression barrier screw** designed for ultra-low MFR resins to ensure homogeneity without degradation
- **Drying**: Dry at **70 °C for 3–4 hours** if moisture exceeds **150 ppm** (recommended max. moisture: **100 ppm**) — critical for thick-wall integrity
- **Cooling**: Use **gradual, multi-zone spray cooling** or **controlled water bath** with slow quench to minimize internal stresses and prevent ovality in thick walls
- **Note**: **No masterbatch required** — carbon black and jet black pigment are pre-dispersed for consistent UV protection and color

Optimize haul-off speed and vacuum calibration to maintain dimensional stability. The ultra-low MFR (0.08 g/10 min) provides high melt strength, reducing sag during cooling — essential for pipes over DN 800 mm.

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 MAX SLOW™.

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 Ultra-Large-Diameter PE 100 Commitment™
(A Technical Partnership – Not a Warranty)

PTC INFRA MAX SLOW™ is supplied as a **certifiable, ultra-low MFR PE 100 HDPE black compound** — engineered for national water authorities, desalination projects, and mining operators building **mega-infrastructure with pipes DN 800–2000 mm**.

What Sets Us Apart

1. Optimized for Mega-Pipes
With an ultra-low MFR of **0.08 g/10 min**, it delivers **exceptional melt strength and sag resistance** — critical for thick-wall, large-diameter extrusion without compromising long-term hydrostatic strength.

2. Full ISO Certification Package
Every batch includes a **Certificate of Analysis (CoA)** with actual MFR, density, FNCT, and OIT data — all referenced to **ISO standards (ISO 4427, ISO 9080, ISO 16770)**, ensuring smooth approval by regional certifiers.

3. No ASTM, No Guesswork
Unlike legacy alternatives that mix ASTM and ISO data, PTC INFRA MAX SLOW™ uses **ISO methods only** — eliminating certification delays in Middle Eastern, African, and Asian markets.

4. Mega-Project Responsiveness
Direct access to polymer specialists who understand **ultra-large-diameter extrusion challenges** — no call centers, no time-zone barriers. We respond on your timeline.

5. Jebel Ali Strategic Stock
Available from bonded inventory in **Jebel Ali Free Zone** — ensuring rapid, traceable delivery for time-critical national infrastructure milestones.

> *The Britannia GulfGate Trade Ultra-Large-Diameter PE 100 Commitment™ is a service pledge. It does not constitute a warranty. Final pipe certification remains the sole responsibility of the pipe manufacturer.*

⚠️ Disclaimer

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

This grade is formulated to meet performance indicators associated with PE 100-class resins for ultra-large-diameter pressure pipe applications. However, long-term validation per ISO 9080 (MRS = 10 MPa) and slow crack growth resistance per ISO 16770 (FNCT) require extended hydrostatic testing and are not performed by Britannia GulfGate Trade. Final pipe certification — including compliance with ISO 4427, structural integrity under site-specific conditions, and suitability for water transmission, outfall, or mining slurry service — 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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The information in this document is based on current knowledge and testing. It is provided for guidance only and does not constitute a warranty or guarantee of performance. Users are responsible for assessing suitability for their specific application.