PTC INFRA PLUS™

Technical Data Sheet	(Technical Equivalent to SABIC P6006N / PE 100 HDPE for Pressure Pipes)
High-Density Polyethylene (HDPE) PE 100	For Potable Water & Natural Gas Pressure Pipes (DN 20–630 mm)

Regulatory Status
For regulatory compliance information, refer to the PTC INFRA PLUS™ 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 2.25% carbon black and be pigmented orange (RAL 1033) during extrusion.
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 (with pigment & carbon black adjustment), 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 = 0.950 g/cm^3, Unpigmented Base Resin, Fully Compatible with ISO 4427 (Water) and ISO 4437 (Gas)

Physical

Property	Nominal Value	Units	Test Method
Density	0.952	g/cm³	ISO 1183
Melt Flow Rate (190°C/5.0 kg)	0.25	g/10 min	ISO 1133

Mechanical

Property	Nominal Value	Units	Test Method
Tensile Strength at Yield	28	MPa	ISO 527-2
Elongation at Break	>500	%	ISO 527-2
Notched Izod Impact Strength	>5.0	kJ/m²	ISO 180
Flexural Modulus	1050	MPa	ISO 178

Long-Term Performance

Property	Nominal Value	Units	Test Method
Minimum Required Strength (MRS)	10	MPa	ISO 9080
Hydrostatic Strength (20°C, 50 yr)	10	MPa	ISO 9080
Environmental Stress Crack Resistance (ESCR)	>1000	h	ASTM D1693
Oxidation Induction Time (210°C)	≥20	min	ISO 11357-6

Rheological Properties

Property	Nominal Value	Units	Test Method
Shear Viscosity at 200°C, 100 s^{-1}	1800	Pa·s	ISO 11443
Die Swell (Capillary, L/D=30)	8	%	Internal

Thermal

Property	Nominal Value	Units	Test Method
Melting Temperature (T_m)	132	°C	ISO 11357-3
Crystallization Temperature (T_c)	118	°C	ISO 11357-3
OIT (210°C)	≥20	min	ISO 11357-6

Additive

Component	Content	Function
Antioxidant (Primary + Secondary)	Compliant	Long-term thermal stability
Processing Stabilizer	Compliant	Extrusion robustness
Carbon Black (for masterbatch version)	2.25 wt%	UV protection, gas compliance

Product Description

Product Description

PTC INFRA PLUS™ is a PE 100 high-density polyethylene base resin, engineered as a high-performance equivalent to SABIC P6006N. With a certified Minimum Required Strength (MRS) of 10.0 MPa, outstanding Environmental Stress Crack Resistance (ESCR >1000 h, ASTM D1693), and robust oxidative stability (OIT >20 min, ISO 11357-6), it delivers reliable long-term hydrostatic performance for critical water and gas infrastructure. Supplied as an unpigmented base resin, it allows pipe manufacturers to precisely formulate final color—blue (RAL 5005/5015) for potable water or orange (RAL 1033) with 2.25% carbon black for gas distribution—in full compliance with ISO 4427 and ISO 4437. Optimized for standard PE 100 extrusion lines across the Middle East, Africa, and Asia, PTC INFRA PLUS™ offers a regionally supported, ISO-aligned alternative to imported grades—without overstatement or unverifiable claims.

Availability & Technical Support

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

Processing Techniques

PTC INFRA PLUS™ is designed for conventional single-screw extrusion (L/D ⩾ 25:1) with standard PE 100 processing parameters:

- Barrel Temperature Profile: 180–220°C (gradual rise)
- Die Temperature: 210–225°C
- Screw Speed: 40–80 rpm (adjust based on pipe diameter and output rate)
- Cooling: Water bath at 10–20°C with controlled haul-off speed
- Drying: Not required (moisture content <300 ppm as supplied)

The resin exhibits excellent melt homogeneity, low die swell (<10%), and stable output—ensuring consistent wall thickness and smooth inner/outer surfaces in pressure pipe applications.

Availability & Technical Support

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

Health & Safety

PTC INFRA PLUS™ is a non-hazardous thermoplastic resin in solid pellet form.

- Inhalation: Not hazardous under normal handling conditions. Dust generation during handling should be minimized.
- Skin/Eye Contact: May cause mild mechanical irritation. Wash with water if contact occurs.
- Ingestion: Low toxicity, but not intended for human consumption.
- Fire Hazard: Combustible solid. In case of fire, emits carbon monoxide, carbon dioxide, and hydrocarbons. Use water spray, dry chemical, or CO_2 extinguishers.
- Regulatory: Complies with REACH and is not classified as hazardous under GHS (CLP Regulation).
- SDS: A Safety Data Sheet (SDS) is available upon request. Refer to the latest version for full handling, exposure, and disposal guidance.

ℹ️ This product contains no intentionally added heavy metals, phthalates, or substances of very high concern (SVHC) above threshold limits.

Storage & Handling

- Store in a dry, well-ventilated area, away from direct sunlight, heat sources, and open flames.
- Keep bags sealed until ready for use to prevent moisture absorption and contamination.
- Use clean, dedicated equipment to avoid cross-contamination with other polymers or additives.
- Palletized bags should be stored on clean, dry pallets and protected from dust, rain, and mechanical damage.
- Shelf life: 24 months from date of manufacture when stored under recommended conditions.
- Do not store near oxidizing agents, acids, or solvents.

📦 All shipments include batch traceability (Lot No.) and Certificate of Analysis (CoA) for quality assurance.

BGT Royalty™ Commitment

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

PTC INFRA PLUS™ is supplied as a certifiable, unpigmented PE 100 HDPE base resin—engineered for pipe manufacturers serving municipal water authorities and gas utilities across emerging markets.

What Sets Us Apart

1. ISO-Aligned Performance
Every batch includes a Certificate of Analysis (CoA) with actual MFR, density, ESCR (>1000 h, ASTM D1693), and OIT (>20 min)—all referenced to ISO and ASTM standards applicable in the Middle East, Africa, and Asia.

2. No FNCT, No Guesswork
We declare only what we can prove. FNCT (ISO 16770) is not part of our technical portfolio, as it cannot be routinely certified by accredited laboratories in our region.

3. True Base Resin Flexibility
Delivered unpigmented—so you control final color and carbon black content to meet local certification requirements without dependency on pre-compounded grades.

4. Local Technical Support
Direct access to polymer engineers who understand your extrusion line, climate, and certification process—no call centers, no time-zone delays.

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

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The data presented in this document are based on standard laboratory testing and represent typical values for PTC INFRA PLUS™. 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 pressure pipe applications. 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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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.