CRP 100 ORANGE

Technical Data Sheet	PTC FLAME ORANGE™
High-Density Polyethylene (HDPE)	PE 100 for Gas Distribution Pipes

Regulatory Status

For regulatory compliance information, refer to the PTC FLAME ORANGE™ Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).
This grade is approved for **gas distribution pipes** in accordance with **ISO 4437 and EN 1555**.

- This grade is **not intended for drinking water, medical, or pharmaceutical applications**.

Status

Commercial: Active

Availability

Middle East, India, Turkey, Central Asia, Africa

Application

Gas Distribution Pipes

Market

Urban & Rural Gas Networks, Pipeline Infrastructure, Utility Providers

Processing Method

Pipe Extrusion (Single- or Twin-Screw)

Attribute

PE 100 Classification, Excellent Long-Term Hydrostatic Strength, Outstanding ESCR, High Impact Resistance, RAL 1033 Orange Pigmentation, 2.25% Carbon Black for UV Protection, Formulated to support pipe manufacturing in accordance with ISO 4437 and EN 1555, Designed for Buried Gas Applications

Typical Properties
Physical

Property	Nominal Value	Units	Test Method
Melt Flow Rate (190 °C / 5.0 kg)	0.27	g/10 min	ISO 1133-1
Melt Flow Rate (190 °C / 21.6 kg)	7	g/10 min	ISO 1133-1
Density	0.95	g/cm³	ISO 1183-1
Bulk Density	570	kg/m³	ISO 60

Mechanical

Property	Nominal Value	Units	Test Method
Tensile Modulus (23 °C)	1050	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)	350≤	%	ISO 527-1,-2
Tensile Strain at Yield (23 °C, 50 mm/min)	8	%	ISO 527-1,-2

Long-Term Performance

Property	Nominal Value	Units	Test Method
Flexural Creep Modulus (4-point,	1200	MPa	ISO 9080
Flexural Creep Modulus (4-point,	560	MPa	ISO 9080
Flexural Creep Modulus (4-point,	330	MPa	ISO 9080
Tensile Creep Modulus (1 hr, 2	850	MPa	ISO 899-1
Tensile Creep Modulus (1000	360	MPa	ISO 899-1
MRS Classification	10	MPa	ISO 9080
ESCR (F50)	1000<	h	ASTM D1693

Impact

Property	Nominal Value	Units	Test Method
Charpy Impact Strength – Notched (23 °C)	29	kJ/m²	ISO 179-1/1eA
Charpy Impact Strength – Notched (–30 °C)	15	kJ/m²	ISO 179-1/1eA

Hardness

Property	Nominal Value	Units	Test Method
Shore Hardness (Shore D, 3 s)	64	—	ISO 868

Thermal

Property	Nominal Value	Units	Test Method
Vicat Softening Temperature (B50)	75	C°	ISO 306
Oxidation Induction Time (210 °C)	32	min	ISO 11357-6
DSC Melting Point	130	C°	DSC

Additive

Property	Nominal Value	Units	Test Method
Orange Pigment (RAL 1033)	Pre-dispersed	—	Visual / Spectrophotometer
Carbon Black Content	2.25	%	ISO 6964

Additional Information

Property	Nominal Value	Units	Test Method
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Product Description

✍️ Product Description
PTC FLAME ORANGE™ is a high-density polyethylene (HDPE) PE 100 compound, pre-pigmented in RAL 1033 orange for unambiguous visual identification in natural gas distribution networks. Formulated with 2.25% high-dispersion carbon black and a bimodal molecular architecture, it delivers excellent long-term hydrostatic strength (MRS = 10 MPa), robust environmental stress crack resistance (ESCR >1000 h), and full compliance with ISO 4437 and EN 1555 for buried gas pipeline applications. Engineered for safe, durable infrastructure, PTC FLAME ORANGE™ supports design lifespans exceeding 100 years — backed by batch-specific documentation and responsive regional 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: 200–225 °C).
For gas pipe extrusion:

- Screw type: Barrier screw with mixing section for homogeneity
- Die design: Spiral mandrel to ensure uniform wall thickness (critical for pressure integrity)
- Cooling: Gradual water bath with controlled temperature drop to minimize residual stress
- Drying: Required if stored in humid conditions (80 °C for 2 hours; max. moisture: 300 ppm)

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

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. Always consult the Safety Data Sheet (SDS) before handling or processing PTC FLAME ORANGE™. If overheated or exposed to air, molten polymer may degrade, producing fumes that can cause irritation to eyes or respiratory tract. Ensure adequate ventilation.

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.
The resin is flammable and may produce dense smoke if burned.
Store away from ignition sources. When handling in bulk, polymer dust may form explosive mixtures in air. Conveying systems should be grounded and equipped with dust filtration.

BGT Royalty™ Commitment

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

At Britannia GulfGate Trade, PTC FLAME ORANGE™ is engineered as more than a PE 100 resin — it is a purpose-formulated compound for safe, long-life, and certifiable natural gas distribution networks, supported by regional technical expertise and transparent, batch-level documentation.

Our Differentiators

1. Climate-Adapted Processing Guidance
We deliver practical, field-tested extrusion parameters aligned with ISO 4437 and EN 1555, specifically adapted to the high-temperature, arid, or humid environments of the Middle East, South Asia, and Africa — not generic global recommendations.

2. Direct Technical Access — No Barriers
Unlike multinational suppliers with centralized support, we provide immediate access to polymer specialists who understand your local extrusion lines, material handling practices, and regional certification requirements — with responses within your working day.

3. Full Batch Traceability & Certification Support
Every delivery includes a batch-specific Certificate of Analysis (CoA) with verified data for:

- MFR (0.27 g/10 min @ 5.0 kg)
- Density (0.950 g/cm^3)
- MRS (10 MPa)
- OIT (32 min @ 210°C)
- ESCR (>1000 h)
- Carbon Black Content (2.25%)

This documentation is structured to streamline compliance with ISO 4437 and EN 1555 certification processes.

The Britannia GulfGate Trade Gas Assurance Framework™ is a service commitment only. It does not constitute a warranty, guarantee, or certification approval. Final pipe design, safety validation, pressure testing, and regulatory compliance 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 FLAME ORANGE™. 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 depends on processing conditions, design, installation, and service environment. Users are responsible for verifying suitability for their specific application and obtaining necessary local regulatory approvals for gas distribution systems.

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

Contact us for further inquiries

PERSIA TRADE CONSURTIUM

Britannia GulfGate Trade
Engineering Trust in Infrastructure Polymers

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