PTC AGRICULTURE FLOW™)

Technical Data Sheet	PTC AGRICULTURE FLOW™ (Technical Alternative to Versalis Eraclene® DB506 / HDPE for Drip Irrigation Pipes)
High-Density Polyethylene (HDPE) –	For Flexible, Thin-Wall Drip Irrigation Tubing

Regulatory Status
For regulatory compliance information, refer to the PTC AGRICULTURE FLOW™ Product Stewardship Bulletin (PSB) and Safety Data Sheet (SDS).
This grade is formulated as a **base HDPE copolymer for agricultural drip irrigation tubing**.
For outdoor applications, the pipe manufacturer must compound this resin with UV stabilizers and carbon black (typically 2.0–2.5%) to ensure long-term weatherability.
This grade is **not UV-stabilized in its base form** and is **not intended for direct outdoor use without stabilization**.
It is **not suitable for potable water, gas, or medical applications**.

Status
Commercial: Active

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

Application
Drip Irrigation Pipes, Agricultural Tubing, Micro-Irrigation Systems

Market
Agricultural Pipe Manufacturers, Agri-Tech Projects, Large-Scale Farming Cooperatives, Greenhouse System Integrators

Processing Method
High-Speed Tubing Extrusion (Single-Screw, Film/Tubing Lines)

Attribute
- HDPE Hexene Copolymer, MFR = 0.23 g/10 min (2.16 kg) / 0.9 g/10 min (5.0 kg), Density = 0.939 g/cm^3, Excellent Drawability, High Melt Strength, Balanced Molecular Weight Distribution, Optimized for Blending with LLDPE/LDPE in Irrigation Pipe Formulations

Physical

Property	Nominal Value	Units	Test Method
Melt Flow Rate (190 °C / 2.16 kg)	0.23	g/10 min	ISO 1133
Melt Flow Rate (190 °C / 5.0 kg)	0.9	g/10 min	ISO 1133
Density	0.939	g/cm³	ISO 1183
Melting Point	129	°C	DSC
Vicat Softening Point (1 kg)	119	°C	ISO 306

Mechanical

Property	Nominal Value	Units	Test Method
Tensile Stress at Yield	18	MPa	ISO 527-3
Tensile Stress at Break	28	MPa	ISO 527-3
Elongation at Break	>800	%	ISO 527-3
Flexural Modulus	690	MPa	ISO 178

Long-Term Performance

Property	Nominal Value	Units	Test Method
ESCR (F50, ASTM D1693/B)	>1000	h	ASTM D1693

Hardness

Property	Nominal Value	Units	Test Method
Shore Hardness (Shore D)	58	—	ISO 868

Thermal

Property	Nominal Value	Units	Test Method
Vicat Softening Point (1 kg)	119	°C	ISO 306
Melting Point	129	°C	DSC (ASTM D746)
Brittleness Temperature	< −60	°C	ASTM D746

Additive

Property	Nominal Value	Units	Test Method
UV Stabilization	Not pre-added — must be	—	—
Carbon Black (for outdoor use)	2.0–2.5% (recommended)	%	ISO 6964
Pigmentation	Natural (unpigmented	—	Visual

⚠️ Strategic Note:
We do not list UV or CB as "contained" — instead, we state they are required for outdoor use but must be added by the customer. This maintains legal safety and technical accuracy.

Product Description

Product Description

PTC AGRICULTURE FLOW™ is a high-drawability HDPE hexene copolymer engineered as a modern alternative to Versalis Eraclene® DB506 for drip irrigation tubing. Designed for **high-speed extrusion of thin-wall, flexible agricultural pipes**, it offers an optimal balance of **melt strength, drawability, and mechanical toughness**. With a dual-load MFR (0.23 / 0.9 g/10 min), it enables stable processing across a wide range of extrusion lines. As a **base resin**, it is intended to be compounded with **carbon black and UV stabilizers** by the pipe manufacturer to meet regional weatherability requirements. Supplied with batch-specific MFR verification and regional technical support from Britannia GulfGate Trade, PTC AGRICULTURE FLOW™ gives agri-pipe producers the formulation flexibility and processing reliability they need for cost-effective, large-scale irrigation solutions across emerging markets.

Availability & Technical Support

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

Processing Techniques

Recommended melt temperature range: **180 °C to 220 °C** (typical operating window: 190–210 °C).

For high-speed drip irrigation tubing extrusion:
- **Screw**: Standard single-screw with mixing section — no special barrier design required
- **Drying**: Optional; dry at **60 °C for 1–2 hours** if moisture exceeds **300 ppm**
- **Blending**: Designed to be **compounded with LLDPE or LDPE** (typical blend: 70–100% PTC AGRICULTURE FLOW™ + 0–30% LLDPE) to optimize flexibility and seal strength
- **Note**: **UV stabilizers and carbon black (2.0–2.5%) must be added by the pipe manufacturer** for outdoor applications

Optimize haul-off speed and die gap to achieve consistent wall thickness in thin-walled tubing (typically 0.2–0.6 mm). The balanced MWD ensures stable bubble formation in film-assisted lines and smooth surface finish.

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 AGRICULTURE FLOW™.

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 Agricultural HDPE Base Resin Commitment™
(A Technical Partnership – Not a Warranty)

PTC AGRICULTURE FLOW™ is supplied as a **high-drawability HDPE base copolymer** — engineered for irrigation pipe manufacturers who require **processing flexibility, formulation control, and consistent melt performance** in high-speed drip tubing lines.

What Sets Us Apart

1. Formulation Freedom, Not Fixed Recipes
Supplied as a **pure base resin** — enabling you to tailor blends with **LLDPE, LDPE, carbon black, and UV packages** to meet exact agronomic and climatic requirements across diverse regions.

2. Processing-Optimized for High Speed
Balanced molecular weight distribution ensures **stable extrusion, excellent drawability, and smooth surface finish** — even at high line speeds for thin-wall tubing (0.2–0.6 mm).

3. Batch Transparency for Quality Control
Every shipment includes a **Certificate of Analysis (CoA)** with actual MFR (0.23 / 0.9 g/10 min) and density — so you can maintain consistent blending ratios and pipe quality.

4. Regionally Responsive Support
Direct access to polymer specialists who understand **agricultural pipe formulation and processing challenges** — no global call centers, no time delays.

5. Jebel Ali Ready Stock
Available from bonded inventory in **Jebel Ali Free Zone** — ensuring rapid delivery for seasonal farming cycles and large-scale agri-projects across the Middle East, India, and Africa.

> *The Britannia GulfGate Trade Agricultural HDPE Base Resin Commitment™ is a service pledge. It does not constitute a warranty. Final product performance, including UV resistance and outdoor durability, remains 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 AGRICULTURE FLOW™. 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 resin is supplied as a **base HDPE copolymer** and **is not UV-stabilized**. For outdoor applications, the pipe manufacturer is solely responsible for compounding with appropriate levels of **carbon black (2.0–2.5%) and UV stabilizers**, and for verifying final product performance under actual service conditions.

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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