TECHNICAL DATA SHEET

# TGH 5010 Black

High Density Polyethylene

## Product Description

TGH 5010 Black is a high-density polyethylene (HDPE), black colored similar RAL 9004 with high melt viscosity for extrusion, injection and compression molding. The product is classified as PE 80 and provides excellent stress crack resistance properties (ESCR) combined with very good long term hydrostatic strength. TGH 5010 Black has been manufactured under TÉCNICAS GÁS licensed technology.

## General Information

- **Status Commercial**: Active
- **Application**: Drinking Water Pipe, Gas Pipe, Industrial, Soil & Waste Pipe
- **Processing**: Compression Molding, Pipe, Sheet
- **Attribute**: Good Abrasion Resistance; Good Chemical Resistance; Good Creep Resistance; Good Heat Aging Resistance; Good Organoleptic Properties; Good UV Resistance; Good Wear Resistance; Good Weather Resistance; High Density; High ESCR (Environmental Stress Cracking Resistance); High Viscosity; Weldable

| | Properties | Value | Unit | Test Methods |
|---|---|---|---|---|
| Physical | Melt Flow Rate @ 190 °C/2.16 kg | 0.1 | g/10 min | ISO 1133-1 |
| | Melt Flow Rate @ 190 °C/5.0 kg | 0.43 | g/10 min | ISO 1133-1 |
| | Melt Flow Rate @ 190 °C/21.6 kg | 9.0 | g/10 min | ISO 1133-1 |
| | Density | 0.957 | $g/cm^3$ | ISO 1183-1 |
| Mechanical | Flexural Creep Modulus @ 4-point loading / 1 min | 1000 | MPa | DIN 16841 |
| | Flexural Creep Modulus @ 4-point loading / 24 hr | 470 | MPa | DIN 16841 |
| | Flexural Creep Modulus @ 4-point loading / 2000 hr | 300 | MPa | DIN 16841 |
| | Tensile Modulus @ 23 °C | 1050 | MPa | ISO 527-1, -2 |
| | Tensile Creep Modulus @ 1 hr / 2 MPa | 640 | MPa | ISO 899-1 |
| | Tensile Creep Modulus @ 1000 hr / 2 MPa | 300 | MPa | ISO 899-1 |
| | Tensile Stress at Yield @ 23 °C, 50 mm/min | 22 | MPa | ISO 527-1, -2 |
| | Tensile Strain at Break @ 23 °C | 650 | % | ISO 527-1, -2 |
| | Tensile Strain at Yield @ 23 °C, 50 mm/min | 8 | % | ISO 527-1, -2 |
| | MRS Classification | 8 | MPa | ISO 9080 |
| | FNCT, (4.0 MPa, 2% Arkopal N100, 80 °C) | ≥100 | hr | ISO 16770 |
| Impact | Charpy Impact Strength – Notched @ 23 °C | 24 | $kJ/m^2$ | ISO 179-1/1eA |
| | Charpy Impact Strength – Notched @ -30 °C | 8 | $kJ/m^2$ | ISO 179-1/1eA |
| Hardness | Shore Hardness, (Shore D, 3 sec) | 59 | - | ISO 868 |
| Thermal | Vicat Softening Temperature, (B50) | 70 | °C | ISO 306 |
| | Oxidation Induction Time, (210 °C) | 30 | min | ISO 11357-6 |
| | DSC Melting Point | 129 | °C | DSC |
| Additive | Carbon Black Content | 2.25 | % | ISO 6964 |
| Additional Information | Odor Threshold - measured on pellets / 30°C / 4 h extraction time | <2 | - | EN 1622/EN 1420 |

**NOTED:**