Technical Data Sheet

# *Petrothene* GA1810P

Linear Low Density Polyethylene

## Product Description

*Petrothene* GA1810 is a series of pelletized linear low density polyethylene resins selected by customers for applications that require maximum strength and toughness. These products offer excellent additive homogeneity, require no transfer equipment modification, and facilitate clean and safe handling. Typical applications include heavy duty shipping sacks, trash can liners, commercial and industrial packaging, as well as food and consumer packaging. The *Petrothene* GA1810 series offers enhanced film strength, drawdown, toughness and heat seal strength. In addition, these resins have excellent low temperature resistance for applications such as stretch film and frozen food packaging.

| | |
|---|---|
| **Application** | Agriculture Film; Bags & Pouches; Can Liners; Film Wrap; Food Packaging Film; Heavy Duty Packaging; Lamination Film; Liner Film; Retail Carryout Bags; Shrink Film |
| **Market** | Flexible Packaging; Rigid Packaging |
| **Processing Method** | Blown Film; Sheet and Profile Extrusion |

| Typical Properties | Nominal Value | English Units | Nominal Value | SI Units | Test Method |
|---|---|---|---|---|---|
| **Physical** | | | | | |
| Melt Flow Rate, (190 °C/2.16 kg) | 1.0 | g/10 min | 1.0 | g/10 min | ASTM D1238 |
| Base Resin Density, (23 °C) | 0.918 | g/cm³ | 0.918 | g/cm³ | ASTM D792 |
| Product Density, (23 °C) | 0.923 | g/cm³ | 0.923 | g/cm³ | ASTM D792 |
| **Film** | | | | | |
| Dart Drop Impact Strength, F50 | 200 | g | 200 | g | ASTM D1709 |
| Tensile Strength at Break | | | | | |
| MD | 7500 | psi | 52 | MPa | ASTM D882 |
| TD | 6500 | psi | 45 | MPa | ASTM D882 |
| Tensile Elongation at Break | | | | | |
| MD | 620 | % | 620 | % | ASTM D882 |
| TD | 700 | % | 700 | % | ASTM D882 |
| 1% Secant Modulus | | | | | |
| MD | 35000 | psi | 240 | MPa | ASTM D882 |
| TD | 42000 | psi | 290 | MPa | ASTM D882 |
| Elmendorf Tear Strength | | | | | |
| MD | 400 | g | 400 | g | ASTM D1922 |
| TD | 650 | g | 650 | g | ASTM D1922 |
| **Thermal** | | | | | |
| Vicat Softening Temperature | 220 | °F | 105 | °C | ASTM D1525 |
| **Optical** | | | | | |
| Haze | 17 | % | 17 | % | ASTM D1003 |
| Gloss, (45°) | 45 | % | 45 | % | ASTM D2457 |

| Additive | | | | | |
|---|---|---|---|---|---|
| Slip | 1000 | ppm | 1000 | ppm | LYB Method |
| Antiblock | 6750 | ppm | 6750 | ppm | LYB Method |
| Polymer Processing Aid | Present | | Present | | LYB Method |

| Product | Product Density(g/cm³) | Haze(%) | Gloss(%) | Slip(ppm) | Antiblock (ppm) | Polymer Processing Aid( ) |
|---|---|---|---|---|---|---|
| GA1810 | 0.918 | 9 | 60 | None | None | None |
| GA1810P | 0.923 | 17 | 45 | 1000 | 6750 | Present |

## Notes

Film sample used for testing was 1.0 mil gauge, 2.5:1 BUR.

These are typical property values not to be construed as specification limits.

## Processing Techniques

Recommended processing conditions for this product are a melt temperature of 400 - 450 °F and a 1.5 to 3.0:1 blow-up ratio.

Using proper techniques, these products can readily be drawn below 0.90 mils at optimum production rates.

Specific recommendations for resin type and processing conditions can only be made when the end use, required properties and fabrication equipment are known.