# HYPERTHERM™ 2399 NT

High Density Polyethylene Resin

The Dow Chemical Company

## Message:

HYPERTHERM -2399 NT BIMODAL POLYETHYLENE Resin is a Polyethylene resin with raised temperature capability produced using UNIPOL II process technology. This product is intended for use in piping systems where high temperatures and aggressive oxidation conditions exist. Suitable applications include hot and cold potable water.
Industrial Standards Compliance:
ASTM D 3350: cell classification PE445574A
Plastics Pipe Institute (PPI): TR-4
Natural Pipe - HYPERTHERM 2399 NT BIMODAL POLYETHYLENE Resin
ASTM PE4710 pipe grade - 1600psi HDB @ 23°C
ASTM PE4710 pipe grade - 800psi HDB @ 82.2°C
NSF International
Natural Pipe - HYPERTHERM 2399 NT BIMODAL POLYETHYLENE Resin
Standard 14 and 61
Meets requirements of
ASTM F2769, F2623, & F1281

| General Information | | | |
|---|---|---|---|
| Agency Ratings | ASTM D 3350 PE445574A<br>ASTM F 1281<br>ASTM F 2623<br>ASTM F 2769<br>ASTM PE4710<br>NSF 14<br>NSF 61<br>PPI TR-4 | | |
| Forms | Particle | | |
| Processing Method | Profile extrusion molding | | |
| **Physical** | **Nominal Value** | **Unit** | **Test Method** |
| Density (Natural) | 0.950 | g/cm³ | ASTM D1505 |
| Melt Mass-Flow Rate (MFR) | | | ASTM D1238 |
| 190°C/2.16 kg | 0.10 | g/10 min | ASTM D1238 |
| 190°C/21.6 kg | 7.0 | g/10 min | ASTM D1238 |
| **Mechanical** | **Nominal Value** | **Unit** | **Test Method** |
| Tensile Strength [1] (Yield) | > 24.1 | MPa | ASTM D638 |
| Tensile Elongation [2] (Break) | > 500 | % | ASTM D638 |
| Flexural Modulus | 1050 | MPa | ASTM D790B |
| resistant to rapid crack propagation, Pc-S-4(0°C) [3] | > 12.0 | bar | ISO 13477 |
| resistant to rapid crack propagation, Tc-S-4 @ 145 psi (10 bar) [4] | | °C | ISO 13477 |
| Slow crack propagation PENT-@ 2.4 MPa [5] | | | ASTM F1473 |

| | | | |
|---|---|---|---|
| 80°C | > 12000 | hr | ASTM F1473 |
| 90°C | > 6000 | hr | ASTM F1473 |
| Thermal Stability | > 220 | °C | ASTM D3350 |
| Chlorine Resistance Level | 5.00 | | ASTM F2023/F2769 |
| Impact | Nominal Value | Unit | Test Method |
| Notched Izod Impact [6] (23°C) | 490 | J/m | ASTM D256A |
| Thermal | Nominal Value | Unit | Test Method |
| Brittleness Temperature [7] | < -75.0 | °C | ASTM D746A |
| Melting Temperature (DSC) | 132 | °C | Internal method |
| Extrusion | Nominal Value | Unit | |
| Melt Temperature | 193 - 232 | °C | |

| Extrusion instructions |
|---|
| Fabrication Conditions:<br>Screw Type: High quality HDPE barrier with mixing<br>Melt Temperature Range: 380-450°F (193-232°C) |

| NOTE | |
|---|---|
| 1. | Compression molded parts prepared according to ASTM D 1928 Procedure C. Properties will vary with changes in molding conditions and aging time. |
| 2. | Compression molded parts prepared according to ASTM D 1928 Procedure C. Properties will vary with changes in molding conditions and aging time. |
| 3. | The pipe diameter is 10 inches IPS (25.4cm) and the standard diameter ratio (SDR) is 11. |
| 4. | Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Ratio (SDR) 11. |
| 5. | Compression molded parts prepared according to ASTM D 1928 Procedure C. Properties will vary with changes in molding conditions and aging time. |
| 6. | Compression molded parts prepared according to ASTM D 1928 Procedure C. Properties will vary with changes in molding conditions and aging time. |
| 7. | Compression molded parts prepared according to ASTM D 1928 Procedure C. Properties will vary with changes in molding conditions and aging time. |

Recommended distributors for this material

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