

Technical Data Sheet

## Ferro Pp TPP20AC17BK

Polypropylene Homopolymer  
LyondellBasell Industries  
Engineering Plastics

### Product Description

Meets/Exceeds Ford Engineering Specification ESH-M4D293-B.  
Primary end use is for AC/heater ducts and similar components.

### General

|                           |                                                                |                                                                     |                     |
|---------------------------|----------------------------------------------------------------|---------------------------------------------------------------------|---------------------|
| Filler / Reinforcement    | • Talc, 20% Filler by Weight                                   |                                                                     |                     |
| Additive                  | • Heat Stabilizer                                              |                                                                     |                     |
| Features                  | • General Purpose                                              | • Heat Stabilized                                                   | • Homopolymer       |
| Automotive Specifications | • ASTM D5857 PP212 T20 Z1<br>• CALSONIC KANSEI EMS# 4540-10057 | • CHRYSLER MS-DB-500<br>CPN2347 Color: Black<br>• FORD ESA-M4D293-A | • FORD ESH-M4D293-B |
| Appearance                | • Black                                                        |                                                                     |                     |
| Forms                     | • Pellets                                                      |                                                                     |                     |
| Processing Method         | • Injection Molding                                            |                                                                     |                     |

| Physical                                  | Nominal Value (English) | Nominal Value (SI)     | Test Method |
|-------------------------------------------|-------------------------|------------------------|-------------|
| Density / Specific Gravity                | 1.06                    | 1.06 g/cm <sup>3</sup> | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (230°C/2.16 Kg) | 6.2 g/10 min            | 6.2 g/10 min           | ASTM D1238  |
| Mechanical                                | Nominal Value (English) | Nominal Value (SI)     | Test Method |
| Tensile Strength (73°F (23°C))            | 4450 psi                | 30.7 MPa               | ASTM D638   |
| Tensile Elongation (Break)                | 20 %                    | 20 %                   | ASTM D638   |
| Flexural Modulus                          | 348000 psi              | 2400 MPa               | ASTM D790   |
| Flexural Strength (Yield)                 | 7500 psi                | 51.7 MPa               | ASTM D790   |
| Impact                                    | Nominal Value (English) | Nominal Value (SI)     | Test Method |
| Notched Izod Impact (73°F (23°C))         | 0.60 ft·lb/in           | 32 J/m                 | ASTM D256   |
| Unnotched Izod Impact (73°F (23°C))       | 9.5 ft·lb/in            | 510 J/m                | ASTM D4812  |
| Gardner Impact                            | 6.00 in·lb              | 0.678 J                | ASTM D3029  |
| Hardness                                  | Nominal Value (English) | Nominal Value (SI)     | Test Method |
| Rockwell Hardness (R-scale)               | 100                     | 100                    | ASTM D785   |
| Thermal                                   | Nominal Value (English) | Nominal Value (SI)     | Test Method |
| Deflection Temperature Under Load         |                         |                        | ASTM D648   |
| 66 Psi (0.45 Mpa), Unannealed             | 248 °F                  | 120 °C                 |             |
| 264 Psi (1.8 Mpa), Unannealed             | 156 °F                  | 69.0 °C                |             |

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| Injection               | Nominal Value (English)         | Nominal Value (SI)            |
|-------------------------|---------------------------------|-------------------------------|
| Drying Temperature      | 176 °F                          | 80 °C                         |
| Drying Time             | 2.0 to 3.0 hr                   | 2.0 to 3.0 hr                 |
| Rear Temperature        | 400 to 410 °F                   | 204 to 210 °C                 |
| Middle Temperature      | 410 to 415 °F                   | 210 to 213 °C                 |
| Front Temperature       | 415 to 420 °F                   | 213 to 216 °C                 |
| Nozzle Temperature      | 420 to 425 °F                   | 216 to 218 °C                 |
| Processing (Melt) Temp  | 428 to 500 °F                   | 220 to 260 °C                 |
| Mold Temperature        | 86 to 140 °F                    | 30 to 60 °C                   |
| Back Pressure           | 20.0 to 50.0 psi                | 0.138 to 0.345 MPa            |
| Screw Speed             | 100 to 150 rpm                  | 100 to 150 rpm                |
| Clamp Tonnage           | 2.0 to 3.0 tons/in <sup>2</sup> | 2.8 to 4.1 kN/cm <sup>2</sup> |
| Screw L/D Ratio         | 20.0:1.0                        | 20.0:1.0                      |
| Screw Compression Ratio | 2.0:1.0                         | 2.0:1.0                       |

### Notes

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