

**Product Information**

Oct 2016

# **Petra<sup>®</sup> 130** **PET (Polyethylene Terephthalate)**


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**Product Description**

Petra 130 is a 30% glass fiber reinforced polyethylene terephthalate injection molding compound. It is available in natural and pigmented versions. It exhibits a superb combination of performance properties including high strength and stiffness at elevated temperatures with good chemical resistance and dimensional stability.

**Applications**

Petra 130 is generally recommended for applications such as automotive door lock components, housings, gears and electrical and mechanical components.

| PHYSICAL                                               | ASTM Test Method | Property Value    |
|--------------------------------------------------------|------------------|-------------------|
| Specific Gravity                                       | D-792            | 1.55              |
| Mold Shrinkage (1/8" bar, in/in)                       |                  | 0.004             |
| MECHANICAL                                             | ASTM Test Method | Property Value    |
| Tensile Strength, Break, MPa (psi)                     | D-638            |                   |
| -40°C (-40°F)                                          |                  | 210 (30,400)      |
| 23°C (73°F)                                            |                  | 155 (22,500)      |
| 80°C (176°F)                                           |                  | 80 (11,600)       |
| 121°C (250°F)                                          |                  | 65 (9,430)        |
| Elongation, Break, %                                   | D-638            |                   |
| 23°C (73°F)                                            |                  | 3                 |
| Flexural Modulus, MPa (psi)                            | D-790            |                   |
| -40°C (-40°F)                                          |                  | 9,660 (1,400,000) |
| 23°C (73°F)                                            |                  | 8,970 (1,300,000) |
| 65°C (149°F)                                           |                  | 6,130 (889,000)   |
| 90°C (194°F)                                           |                  | 3,440 (499,000)   |
| 121°C (250°F)                                          |                  | 2,830 (410,000)   |
| Flexural Strength, MPa (psi)                           | D-790            |                   |
| -40°C (-40°F)                                          |                  | 275 (39,900)      |
| 23°C (73°F)                                            |                  | 240 (34,800)      |
| 65°C (149°F)                                           |                  | 170 (24,600)      |
| 90°C (194°F)                                           |                  | 105 (15,200)      |
| 121°C (250°F)                                          |                  | 85 (12,300)       |
| Rockwell Hardness, R Scale                             | D-785            | 118               |
| IMPACT                                                 | ASTM Test Method | Property Value    |
| Notched Izod Impact, J/M (ft-lbs/in)                   | D-256            |                   |
| 23°C (73°F)                                            |                  | 95 (1.8)          |
| THERMAL                                                | ASTM Test Method | Property Value    |
| Melting Point, °C(°F)                                  | D-3418           | 245 (473)         |
| Heat Deflection @ 264 psi (1.8 MPa) °C(°F)             | D-648            | 220 (428)         |
| Coef. of Linear Thermal Expansion, mm/mm °C (in/in °F) | E-831            | 0.23 X10-4        |
| UL RATINGS                                             | UL Test Method   | Property Value    |
| Flammability Rating, .75mm                             | UL94             | HB                |
| Relative Temperature Index, .75mm                      | UL746B           |                   |
| Mechanical w/o Impact, °C                              |                  | 140               |
| Mechanical w/ Impact, °C                               |                  | 140               |
| Electrical, °C                                         |                  | 140               |
| Flammability Rating, 1.5mm                             | UL94             | HB                |
| Relative Temperature Index, 1.5mm                      | UL746B           |                   |
| Mechanical w/o Impact, °C                              |                  | 140               |
| Mechanical w/ Impact, °C                               |                  | 140               |
| Electrical, °C                                         |                  | 140               |
| Flammability Rating, 3.0mm                             | UL94             | HB                |
| Relative Temperature Index, 3.0mm                      | UL746B           |                   |
| Mechanical w/o Impact, °C                              |                  | 140               |
| Mechanical w/ Impact, °C                               |                  | 140               |
| Electrical, °C                                         |                  | 140               |
| ELECTRICAL                                             | ASTM Test Method | Property Value    |
| Volume Resistivity, 1.5 mm                             | D-257            | >1E13             |
| Dielectric Strength, Short Time, 1.5 mm                | D-149            | 22                |

**Processing Guidelines**
**Material Handling**

Max. Water content: 0.02%

To ensure optimum part performance, this product must be dried prior to molding and maintained at a moisture level of less than 0.02%, with a preferred moisture target of less than 0.015%. A dehumidifying hopper dryer mounted on the molding machine and equipped with alternating desiccant beds and air temperature/dew point indicators is recommended. Drying time is 2 - 4 hours at 120°C (248°F). Further information

concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

**Typical Profile**

Melt Temperature 280-300°C (536-572°F)

Mold Temperature 100-110°C (212-230°F)

Injection and Packing Pressure 35-125 bar (500-1500 psi)

**Mold Temperatures**

This product can be processed over mold temperatures of 80-120°C; however, for optimizing surface appearance, dimensional stability and part performance, mold surface temperatures of 100-110°C (212-230°F) are preferred.

**Pressures**

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas. Minimal back pressure should be utilized to prevent glass breakage. recommended to minimize glass fiber breakage.

**Fill Rate**

Fast fill rates are recommended to ensure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.

**Note**

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BASF Corporation  
Engineering Plastics  
1609 Biddle Avenue  
Wyandotte, MI 48192

General Information: 800-BC-RESIN  
Technical Assistance: 800-527-TECH (734-324-5150)  
Web address: <http://www.plasticsportal.com/usa>

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