

**Technical Data Sheet**  
**Centrex® 821**  
 Acrylonitrile Styrene Acrylate  
 Engineering Plastics



| General                   |                                                                                                                                                                                                                                   |                                                                                                      |                                                                       |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Features                  | <ul style="list-style-type: none"> <li>• Good Processability</li> <li>• High Heat Resistance</li> </ul>                                                                                                                           | <ul style="list-style-type: none"> <li>• Medium Gloss</li> <li>• Medium Impact Resistance</li> </ul> | <ul style="list-style-type: none"> <li>• Weather Resistant</li> </ul> |
| Uses                      | <ul style="list-style-type: none"> <li>• Automotive Applications</li> </ul>                                                                                                                                                       | <ul style="list-style-type: none"> <li>• Automotive Exterior Parts</li> </ul>                        |                                                                       |
| Agency Ratings            | <ul style="list-style-type: none"> <li>• EC 1907/2006 (REACH)</li> </ul>                                                                                                                                                          | <ul style="list-style-type: none"> <li>• EU 2002/96/EC (WEEE)</li> </ul>                             |                                                                       |
| RoHS Compliance           | <ul style="list-style-type: none"> <li>• RoHS Compliant</li> </ul>                                                                                                                                                                |                                                                                                      |                                                                       |
| Automotive Specifications | <ul style="list-style-type: none"> <li>• CHRYSLER MS-DB-19 Type C CPN3409 Color: 90867 Black</li> <li>• DELPHI DX300105</li> <li>• FORD WSB-M4D833-A Color: 909067</li> <li>• GM GMP.ASA.001</li> <li>• GM GMP.ASA.002</li> </ul> |                                                                                                      |                                                                       |
| UL File NumberUSA         | <ul style="list-style-type: none"> <li>• E150937</li> </ul>                                                                                                                                                                       |                                                                                                      |                                                                       |
| Forms                     | <ul style="list-style-type: none"> <li>• Pellets</li> </ul>                                                                                                                                                                       |                                                                                                      |                                                                       |
| Processing Method         | <ul style="list-style-type: none"> <li>• Injection Molding</li> </ul>                                                                                                                                                             |                                                                                                      |                                                                       |

| Physical                                  | Nominal Value (English) | Nominal Value (SI) | Test Method |
|-------------------------------------------|-------------------------|--------------------|-------------|
| Density / Specific Gravity                | 1.08                    | 1.08 g/cm³         | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (200°C/10.0 kg) | 6.7 g/10 min            | 6.7 g/10 min       | ASTM D1238  |
| Molding Shrinkage - Flow                  | 5.0E-3 to 6.0E-3 in/in  | 0.50 to 0.60 %     | ASTM D955   |

| Mechanical                              | Nominal Value (English) | Nominal Value (SI) | Test Method |
|-----------------------------------------|-------------------------|--------------------|-------------|
| Tensile Modulus <sup>1</sup>            | 360000 psi              | 2480 MPa           | ASTM D638   |
| Tensile Strength <sup>1</sup> (Yield)   | 6300 psi                | 43.4 MPa           | ASTM D638   |
| Flexural Modulus - Tangent <sup>2</sup> | 350000 psi              | 2410 MPa           | ASTM D790   |
| Flexural Strength <sup>2</sup>          | 10000 psi               | 68.9 MPa           | ASTM D790   |

| Impact                            | Nominal Value (English) | Nominal Value (SI) | Test Method |
|-----------------------------------|-------------------------|--------------------|-------------|
| Notched Izod Impact               |                         |                    | ASTM D256   |
| -40°F (-40°C), 0.125 in (3.18 mm) | 0.50 ft·lb/in           | 27 J/m             |             |
| 73°F (23°C), 0.125 in (3.18 mm)   | 3.0 ft·lb/in            | 160 J/m            |             |
| Instrumented Dart Impact          |                         |                    | ASTM D3763  |
| -40°F (-40°C)                     | 8.85 in·lb              | 1.00 J             |             |
| 73°F (23°C)                       | 230 in·lb               | 26.0 J             |             |

| Hardness                    | Nominal Value (English) | Nominal Value (SI) | Test Method |
|-----------------------------|-------------------------|--------------------|-------------|
| Rockwell Hardness (R-Scale) | 105                     | 105                | ASTM D785   |

| Thermal                                           | Nominal Value (English) | Nominal Value (SI) | Test Method             |
|---------------------------------------------------|-------------------------|--------------------|-------------------------|
| Deflection Temperature Under Load                 |                         |                    | ASTM D648               |
| 264 psi (1.8 MPa), Unannealed, 0.125 in (3.18 mm) | 175 °F                  | 79.4 °C            |                         |
| 264 psi (1.8 MPa), Unannealed, 0.500 in (12.7 mm) | 190 °F                  | 87.8 °C            |                         |
| Vicat Softening Temperature                       | 233 °F                  | 112 °C             | ASTM D1525 <sup>3</sup> |
| CLTE - Flow                                       | 5.5E-5 in/in/°F         | 9.9E-5 cm/cm/°C    | ASTM D696               |
| RTI Elec (0.06 in (1.5 mm))                       | 122 °F                  | 50.0 °C            | UL 746                  |
| RTI Imp (0.06 in (1.5 mm))                        | 122 °F                  | 50.0 °C            | UL 746                  |
| RTI Str (0.06 in (1.5 mm))                        | 122 °F                  | 50.0 °C            | UL 746                  |

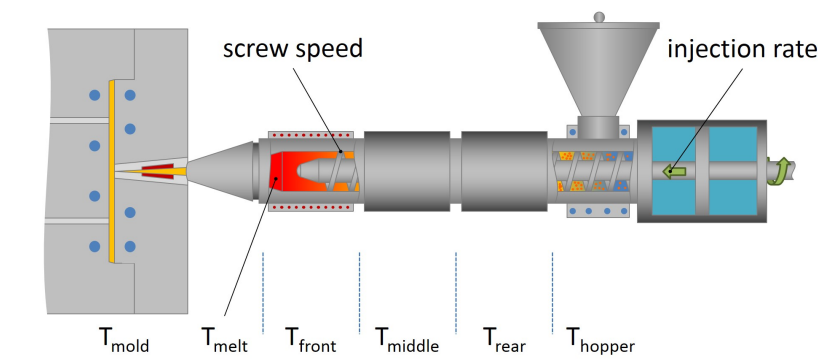
| Flammability | Nominal Value (English) | Nominal Value (SI) | Test Method |
|--------------|-------------------------|--------------------|-------------|
| Flame Rating | HB                      | HB                 | UL 94       |



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| Injection               | Nominal Value (English) | Nominal Value (SI) |
|-------------------------|-------------------------|--------------------|
| Drying Temperature      | 180 to 190 °F           | 82 to 88 °C        |
| Drying Time             | 2.0 hr                  | 2.0 hr             |
| Suggested Max Moisture  | 0.10 %                  | 0.10 %             |
| Suggested Shot Size     | 50 to 70 %              | 50 to 70 %         |
| Suggested Max Regrind   | 20 %                    | 20 %               |
| Rear Temperature        | 460 to 520 °F           | 238 to 271 °C      |
| Middle Temperature      | 460 to 520 °F           | 238 to 271 °C      |
| Front Temperature       | 460 to 520 °F           | 238 to 271 °C      |
| Nozzle Temperature      | 460 to 520 °F           | 238 to 271 °C      |
| Processing (Melt) Temp  | 460 to 520 °F           | 238 to 271 °C      |
| Mold Temperature        | 150 to 190 °F           | 66 to 88 °C        |
| Injection Rate          | Moderate-Fast           | Moderate-Fast      |
| Screw L/D Ratio         | 20.0:1.0                | 20.0:1.0           |
| Screw Compression Ratio | 2.5:1.0                 | 2.5:1.0            |

Notes

- <sup>1</sup> 0.20 in/min (5.1 mm/min)
- <sup>2</sup> 0.050 in/min (1.3 mm/min)
- <sup>3</sup> Rate B (120°C/h), Loading 1 (10 N)

Notes

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

