

## Styron INSPIRE™ TF3800 Polypropylene

Category : Polymer , Thermoplastic , Polypropylene (PP)

### Material Notes:

Information provided by DowThe Inspire brand was spun off from Dow Chemical to Styron in 2010

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Styron-INSPIRE-TF3800-Polypropylene.php](http://www.lookpolymers.com/polymer_Styron-INSPIRE-TF3800-Polypropylene.php)

| Physical Properties | Metric                               | English                              | Comments   |
|---------------------|--------------------------------------|--------------------------------------|------------|
| Specific Gravity    | 1.136 g/cc                           | 1.136 g/cc                           | ASTM D792  |
| Melt Flow           | 21 g/10 min                          | 21 g/10 min                          | ASTM D1238 |
|                     | @Load 2.16 kg,<br>Temperature 230 °C | @Load 4.76 lb,<br>Temperature 446 °F |            |

| Mechanical Properties      | Metric                                      | English                                      | Comments   |
|----------------------------|---|--|------------|
| Tensile Strength, Ultimate | 11.8 MPa                                    | 1710 psi                                     | ASTM D638  |
| Tensile Strength, Yield    | 16.3 MPa                                    | 2360 psi                                     | ASTM D638  |
| Elongation at Break        | 33 %  | 33 %   | ASTM D638  |
| Elongation at Yield        | 4.8 %                                       | 4.8 %  | ASTM D638  |
| Tensile Modulus            | 1.19 GPa                                    | 172 ksi                                      | ASTM D638  |
| Flexural Strength          | 22.2 MPa                                    | 3220 psi                                     | ASTM D790  |
| Flexural Modulus           | 1.64 GPa                                    | 238 ksi                                      | ASTM D790  |
| Izod Impact, Notched       | 0.214 J/cm                                  | 0.400 ft-lb/in                               | ASTM D256  |
|                            | @Thickness 3.17 mm,<br>Temperature -28.9 °C | @Thickness 0.125 in,<br>Temperature -20.0 °F |            |
|                            | 0.427 J/cm                                  | 0.800 ft-lb/in                               | ASTM D256  |
|                            | @Thickness 3.17 mm,<br>Temperature -17.8 °C | @Thickness 0.125 in,<br>Temperature 0.000 °F |            |
|                            | 3.26 J/cm                                   | 6.10 ft-lb/in                                | ASTM D256  |
| Dart Drop, Total Energy    | 27.0 J                                      | 19.9 ft-lb                                   | ASTM D3763 |
|                            | @Temperature 22.8 °C                        | @Temperature 73.0 °F                         |            |
|                            | 31.0 J                                      | 22.9 ft-lb                                   | ASTM D3763 |
|                            | @Temperature -17.8 °C                       | @Temperature 0.000 °F                        |            |

| Mechanical Properties | Metric                | English               | Comments                       |
|-----------------------|-----------------------|-----------------------|--------------------------------|
|                       | @Temperature -28.9 °C | @Temperature -20.0 °F | ASTM D3763                     |
|                       | 34.0 J                | 25.1 ft-lb            | ASTM D3763                     |
|                       | @Temperature -33.9 °C | @Temperature -29.0 °F |                                |
| Falling Dart Impact   | 18.0 J                | 13.3 ft-lb            | 73°F, Peak Energy; ASTM D3763  |
|                       | 22.0 J                | 16.2 ft-lb            | 0°F, Peak Energy; ASTM D3763   |
|                       | 24.0 J                | 17.7 ft-lb            | -20°F, Peak Energy; ASTM D3763 |
|                       | 24.0 J                | 17.7 ft-lb            | -29°F, Peak Energy; ASTM D3763 |

| Thermal Properties                          | Metric                                    | English                                     | Comments                |
|---|---|---|-------------------------|
| CTE, linear                                 | 73.8 $\mu\text{m}/\text{m}\cdot\text{°C}$ | 41.0 $\mu\text{in}/\text{in}\cdot\text{°F}$ | ASTM D696               |
|   | @Temperature -30.0 - 30.0 °C              | @Temperature -22.0 - 86.0 °F                |                         |
| Deflection Temperature at 0.46 MPa (66 psi) | 93.9 °C                                   | 201 °F                                      | Unannealed; ISO 75-2-92 |
|   | @Thickness 3.17 mm                        | @Thickness 0.125 in                         |                         |
| Deflection Temperature at 1.8 MPa (264 psi) | 51.1 °C                                   | 124 °F                                      | Unannealed; ISO 75-2-92 |
|   | @Thickness 3.17 mm                        | @Thickness 0.125 in                         |                         |

## Contact Songhan Plastic Technology Co.,Ltd.

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