

## Lubrizol ISOPLAST™ 302EZ Engineering Thermoplastic Polyurethane Resin

Category : Polymer , Thermoplastic , Polyurethane, TP

### Material Notes:

NSF Standard 61 Certified Information provided by Lubrizol Lubrizol acquired the Isoplast product line from Dow in 2009.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Lubrizol-ISOPLAST-302EZ-Engineering-Thermoplastic-Polyurethane-Resin.php](http://www.lookpolymers.com/polymer_Lubrizol-ISOPLAST-302EZ-Engineering-Thermoplastic-Polyurethane-Resin.php)

| Physical Properties   | Metric                | English               | Comments  |
|-----------------------|-----------------------|-----------------------|-----------|
| Specific Gravity      | 1.20 g/cc             | 1.20 g/cc             | ASTM D792 |
| Linear Mold Shrinkage | 0.0040 - 0.0060 cm/cm | 0.0040 - 0.0060 in/in | ASTM D955 |

| Mechanical Properties      | Metric                                      | English                                      | Comments   |
|----------------------------|---------------------------------------------|----------------------------------------------|------------|
| Hardness, Rockwell M       | 92                                          | 92                                           | ASTM D648  |
| Hardness, Rockwell R       | 124                                         | 124                                          | ASTM D648  |
| Tensile Strength, Ultimate | 68.9 MPa                                    | 10000 psi                                    | ASTM D638  |
| Tensile Strength, Yield    | 82.7 MPa                                    | 12000 psi                                    | ASTM D638  |
| Elongation at Break        | 30 %                                        | 30 %                                         | ASTM D638  |
| Elongation at Yield        | 9.0 %                                       | 9.0 %                                        | ASTM D638  |
| Tensile Modulus            | 1.93 GPa                                    | 280 ksi                                      | ASTM D638  |
| Flexural Strength          | 96.5 MPa                                    | 14000 psi                                    | ASTM D790  |
| Flexural Modulus           | 2.28 GPa                                    | 330 ksi                                      | ASTM D790  |
| Izod Impact, Notched       | 0.587 J/cm                                  | 1.10 ft-lb/in                                | ASTM D256  |
|                            | @Thickness 3.17 mm,<br>Temperature -40.0 °C | @Thickness 0.125 in,<br>Temperature -40.0 °F |            |
|                            | 1.07 J/cm                                   | 2.00 ft-lb/in                                | ASTM D256  |
|                            | @Thickness 3.17 mm,<br>Temperature 22.8 °C  | @Thickness 0.125 in,<br>Temperature 73.0 °F  |            |
| Dart Drop, Total Energy    | 68.0 J                                      | 50.2 ft-lb                                   | ASTM D3763 |

| Thermal Properties                 | Metric               | English              | Comments  |
|------------------------------------|----------------------|----------------------|-----------|
| CTE, linear                        | 57.6 μm/m-°C         | 32.0 μin/in-°F       | ASTM D696 |
|                                    | @Temperature 20.0 °C | @Temperature 68.0 °F |           |
| Deflection Temperature at 0.46 MPa |                      |                      |           |

| (56 psi)<br>Thermal Properties                 | 132 °C<br>Metric | 270 °F<br>English | unannealed; ASTM D648<br>Comments |
|------------------------------------------------|------------------|-------------------|-----------------------------------|
|                                                | 143 °C           | 290 °F            | annealed; ASTM D648               |
| Deflection Temperature at 1.8 MPa<br>(264 psi) | 116 °C           | 240 °F            | unannealed; ASTM D648             |
|                                                | 138 °C           | 280 °F            | annealed; ASTM D648               |
| Vicat Softening Point                          | 147 °C           | 297 °F            | ASTM D1525                        |

| Optical Properties    | Metric | English | Comments   |
|-----------------------|--------|---------|------------|
| Yellow Index          | 40 %   | 40 %    | ASTM D1925 |
| Transmission, Visible | 88 %   | 88 %    | ASTM D1003 |

| Processing Properties | Metric        | English      | Comments |
|-----------------------|---------------|--------------|----------|
| Melt Temperature      | 238 - 260 °C  | 460 - 500 °F |          |
| Mold Temperature      | 93.0 - 121 °C | 199 - 250 °F |          |
| Drying Temperature    | 127 - 138 °C  | 261 - 280 °F |          |

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