

## Eastman Eastar GN002 Copolyester, Natural (discontinued \*\*)

Category : Polymer , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET) , Polyethylene Terephthalate (PET), Unreinforced

### Material Notes:

Eastar GN002 Copolyester is a glycol modified polyethylene terephthalate (PET) with an added mold release. Eastar GN002 copolyester will not crystallize and thus offers wider processing latitude than conventional crystallizable polyesters. This material offers an excellent combination of clarity, toughness, and melt strength that makes it useful for a variety of processing techniques and end-use applications. Applications/Uses Blister packaging

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Eastman-Eastar-GN002-Copolyester-Natural-nbspdiscontinued-.php](http://www.lookpolymers.com/polymer_Eastman-Eastar-GN002-Copolyester-Natural-nbspdiscontinued-.php)

| Physical Properties   | Metric                                      | English                                      | Comments                 |
|-----------------------|---------------------------------------------|----------------------------------------------|--------------------------|
| Specific Gravity      | 1.27 g/cc                                   | 1.27 g/cc                                    | ASTM D792                |
| Density               | 1.27 g/cc                                   | 0.0459 lb/in <sup>3</sup>                    | ISO 1183                 |
| Water Absorption      | 0.13 %                                      | 0.13 %                                       | 24h Immersion; ISO 62    |
|                       | 0.13 %                                      | 0.13 %                                       | 24h Immersion; ASTM D570 |
| Linear Mold Shrinkage | 0.0020 - 0.0050 cm/cm<br>@Thickness 3.20 mm | 0.0020 - 0.0050 in/in<br>@Thickness 0.126 in | ASTM D955                |

| Mechanical Properties     | Metric   | English   | Comments  |
|---------------------------|----------|-----------|-----------|
| Hardness, Rockwell R      | 106      | 106       | ASTM D785 |
| Tensile Strength at Break | 28.0 MPa | 4060 psi  | ISO 527   |
|                           | 28.0 MPa | 4060 psi  | ASTM D638 |
| Tensile Strength, Yield   | 50.0 MPa | 7250 psi  | ASTM D638 |
|                           | 50.0 MPa | 7250 psi  | ISO 527   |
| Elongation at Break       | 60 %     | 60 %      | ISO 527   |
|                           | 110 %    | 110 %     | ASTM D638 |
| Elongation at Yield       | 4.2 %    | 4.2 %     | ISO 527   |
|                           | 4.3 %    | 4.3 %     | ASTM D638 |
| Flexural Yield Strength   | 68.0 MPa | 9860 psi  | ISO 178   |
|                           | 70.0 MPa | 10200 psi | ASTM D790 |
| Flexural Modulus          | 2.00 GPa | 290 ksi   | ISO 178   |

| Mechanical Properties      | 2.10 GPa<br>Metric     | 305 ksi<br>English         | ASTM D790<br>Comments                               |
|----------------------------|------------------------|----------------------------|-----------------------------------------------------|
| Izod Impact, Notched       | 0.370 J/cm             | 0.693 ft-lb/in             | ASTM D256                                           |
|                            | @Temperature -40.0 °C  | @Temperature -40.0 °F      |                                                     |
|                            | 1.01 J/cm              | 1.89 ft-lb/in              | ASTM D256                                           |
|                            | @Temperature 23.0 °C   | @Temperature 73.4 °F       |                                                     |
| Izod Impact, Unnotched     | NB                     | NB                         | ASTM D4812                                          |
|                            | NB                     | NB                         |                                                     |
|                            | @Temperature -40.0 °C  | @Temperature -40.0 °F      | ASTM D4812                                          |
|                            |                        |                            |                                                     |
| Izod Impact, Notched (ISO) | 4.20 kJ/m <sup>2</sup> | 2.00 ft-lb/in <sup>2</sup> | ISO 180                                             |
|                            | @Temperature -40.0 °C  | @Temperature -40.0 °F      |                                                     |
|                            | 6.20 kJ/m <sup>2</sup> | 2.95 ft-lb/in <sup>2</sup> | ISO 180                                             |
|                            | @Temperature 23.0 °C   | @Temperature 73.4 °F       |                                                     |
| Puncture Energy            | 12.0 J                 | 8.85 ft-lb                 | Puncture Resistance @ max load,<br>23°C; ISO 6603-2 |
|                            | 13.0 J                 | 9.59 ft-lb                 |                                                     |
|                            | @Temperature -40.0 °C  | @Temperature -40.0 °F      | Puncture Resistance at Max Load;<br>ISO 6603-2      |

| Thermal Properties                             | Metric               | English                            | Comments             |
|------------------------------------------------|----------------------|------------------------------------|----------------------|
| Specific Heat Capacity                         | 1.30 J/g-°C          | 0.311 BTU/lb-°F                    | DSC                  |
|                                                | @Temperature 60.0 °C | @Temperature 140 °F                |                      |
|                                                | 2.01 J/g-°C          | 0.480 BTU/lb-°F                    | DSC                  |
|                                                | @Temperature 240 °C  | @Temperature 464 °F                |                      |
| Thermal Conductivity                           | 0.190 W/m-K          | 1.32 BTU-in/hr-ft <sup>2</sup> -°F | ASTM C177            |
| Deflection Temperature at 0.46 MPa<br>(66 psi) | 70.0 °C              | 158 °F                             | ISO 75               |
|                                                | 70.0 °C              | 158 °F                             | ASTM D648            |
| Deflection Temperature at 1.8 MPa<br>(264 psi) | 64.0 °C              | 147 °F                             | ISO 75               |
|                                                | 64.0 °C              | 147 °F                             | ASTM D648            |
| Vicat Softening Point                          | 76.0 °C              | 169 °F                             | 5kg load; ISO 306    |
|                                                | 85.0 °C              | 185 °F                             | 1kg load; ISO 306    |
|                                                | 85.0 °C              | 185 °F                             | 1kg load; ASTM D1525 |

| Thermal Properties | <sup>HB</sup><br>Metric | <sup>HB</sup><br>English | Comments |
|--------------------|-------------------------|--------------------------|----------|
|                    | @Thickness 1.60 mm      | @Thickness 0.0630 in     |          |

| Electrical Properties          | Metric             | English            | Comments                        |
|--------------------------------|--------------------|--------------------|---------------------------------|
| Volume Resistivity             | 1.00e+15 ohm-cm    | 1.00e+15 ohm-cm    | ASTM D257                       |
| Surface Resistivity per Square | 1.00e+16 ohm       | 1.00e+16 ohm       | ASTM D257                       |
| Dielectric Constant            | 2.4                | 2.4                | ASTM D150                       |
|                                | @Frequency 1e+6 Hz | @Frequency 1e+6 Hz |                                 |
|                                | 2.6                | 2.6                | ASTM D150                       |
|                                | @Frequency 1000 Hz | @Frequency 1000 Hz |                                 |
| Dielectric Strength            | 16.1 kV/mm         | 409 kV/in          | Short Time, 500V/sec; ASTM D149 |
| Dissipation Factor             | 0.0050             | 0.0050             | ASTM D150                       |
|                                | @Frequency 1000 Hz | @Frequency 1000 Hz |                                 |
|                                | 0.017              | 0.017              | ASTM D150                       |
|                                | @Frequency 1e+6 Hz | @Frequency 1e+6 Hz |                                 |
| Arc Resistance                 | 158 sec            | 158 sec            | ASTM D495                       |

| Processing Properties | Metric         | English       | Comments |
|-----------------------|----------------|---------------|----------|
| Melt Temperature      | 250 - 270 °C   | 482 - 518 °F  |          |
| Mold Temperature      | 15.0 - 40.0 °C | 59.0 - 104 °F |          |
| Drying Temperature    | 70.0 °C        | 158 °F        |          |
| Dry Time              | 6 hour         | 6 hour        |          |

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