

## 3M Dyneon™ 2299X Ultra High Viscosity Fluoroelastomer

Category : Polymer , Thermoset , Fluoropolymer, TS , Thermoset Fluoroelastomer , Rubber or Thermoset Elastomer (TSE)

### Material Notes:

3M™ Dyneon™ FC 2299X is an ultra high viscosity fluoroelastomers designed for use in applications such as o-rings, gaskets and seals requiring higher strength than achievable with lower viscosity fluoroelastomer copolymers. When appropriately formulated, FC 2299X provides higher tensile strength, improved tear resistance, and lower compression set than comparably formulated, lower viscosity fluoroelastomer copolymers. These products are offered in either slab form (FC 2299X) or in free flowing granule form (FC 2299PX). Features and Benefits: Ultra high viscosity gumstock without incorporated curatives Copolymer composition of vinylidene fluoride and hexafluoropropylene Targeted for compression molding Both are diamine or dihydroxy curable gums Available in easy-to-weigh granular form Information provided by the Dyneon division of 3M.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_3M-Dyneon-2299X-Ultra-High-Viscosity-Fluoroelastomer.php](http://www.lookpolymers.com/polymer_3M-Dyneon-2299X-Ultra-High-Viscosity-Fluoroelastomer.php)

| Physical Properties | Metric              | English             | Comments |
|---------------------|---------------------|---------------------|----------|
| Specific Gravity    | 1.80 g/cc           | 1.80 g/cc           |          |
| Mooney Viscosity    | 100                 | 100                 | ML 1+10  |
|                     | @Temperature 150 °C | @Temperature 302 °F |          |
|                     | 150                 | 150                 | ML 1+10  |
|                     | @Temperature 121 °C | @Temperature 250 °F |          |

| Mechanical Properties     | Metric                                   | English                                 | Comments                                                              |
|---------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------|
| Hardness, Shore A         | 77                                       | 77                                      | Press cure 10 Minutes @ 177°C, Post Cure 16 Hours @ 232°C; ASTM D2240 |
| Tensile Strength at Break | 14.8 MPa                                 | 2150 psi                                | Press cure 10 Minutes @ 177°C, Post Cure 16 Hours @ 232°C             |
| Elongation at Break       | 175 %                                    | 175 %                                   | Press cure 10 Minutes @ 177°C, Post Cure 16 Hours @ 232°C             |
| 100% Modulus              | 0.00810 GPa                              | 1.17 ksi                                | Press cure 10 Minutes @ 177°C, Post Cure 16 Hours @ 232°C             |
| Compression Set           | 14 %                                     | 14 %                                    | Method B, -214 O-ring, 70 Hours; ASTM D395                            |
|                           | @Treatment Temp. 200 °C, Time 252000 sec | @Treatment Temp. 392 °F, Time 70.0 hour |                                                                       |

| Optical Properties    | Metric | English | Comments                                  |
|-----------------------|--------|---------|-------------------------------------------|
| Transmission, Visible | 25 %   | 25 %    | translucent, but thickness not quantified |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|--------|---------|----------|
| Fluorine, F                   | 65.9 % | 65.9 %  |          |

| Descriptive Properties                  | Value              | Comments                             |
|-----------------------------------------|--------------------|--------------------------------------|
| Color                                   | Translucent Amber  |                                      |
| MH, Maximum Toque                       | 27.8 inch-lb       | 100 cpm, 0.5° Arc, 6 Minutes @ 177°C |
| ML, Minimum Torque                      | 4.9 inch-lb        | 100 cpm, 0.5° Arc, 6 Minutes @ 177°C |
| Solubility                              | Ketones and Esters |                                      |
| t2, Time to 2 Inch-lb Rise from Minimum | 1.0 Minute         | 100 cpm, 0.5° Arc, 6 Minutes @ 177°C |
| t'50, Time to 50% Cure                  | 1.6 Minutes        | 100 cpm, 0.5° Arc, 6 Minutes @ 177°C |
| t'90, Time to 90% Cure                  | 2.3 Minutes        | 100 cpm, 0.5° Arc, 6 Minutes @ 177°C |

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