

## DuPont Nucrel® 403 Ethylene-Methacrylic Acid Copolymer Resin for Blown and Cast Film

Category : Polymer , Film , Thermoplastic , Ethylene Methyl Acrylate , Ethylene-Methyl Acrylate Copolymer, Film Grade

### Material Notes:

4 wt% Methacrylic Acid.Nucrel® 0403 is an ethylene-methacrylic acid copolymer resin available for use in blown and cast film extrusion and coextrusion equipment designed to process polyethylene resins.Features/Benefits: Adhesion to metallized film. Excellent adhesion to PE. Better hot tack, sealability through contamination and heat seal strength compared to PE. Excellent optical properties.Typical Applications: Tie layer in Surlyn®/TIE/PE type structures. Coextrusion with Nucrel® and PE in film structures. Thermal lamination to metal surfaces. Information provided by DuPont Packaging Polymers.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_DuPont-Nucrel-403-Ethylene-Methacrylic-Acid-Copolymer-Resin-for-Blown-and-Cast-Film.php](http://www.lookpolymers.com/polymer_DuPont-Nucrel-403-Ethylene-Methacrylic-Acid-Copolymer-Resin-for-Blown-and-Cast-Film.php)

| Physical Properties | Metric                                      | English                                     | Comments                     |
|---------------------|---|---|------------------------------|
| Density             | 0.930 g/cc                                  | 0.0336 lb/in <sup>3</sup>                   | ASTM D792                    |
| Viscosity           | 1.10e+6 cP                                  | 1.10e+6 cP                                  | estimated from log-log graph |
|                     | @Shear Rate 50.0 1/s,<br>Temperature 190 °C | @Shear Rate 50.0 1/s,<br>Temperature 374 °F |                              |
| Melt Flow           | 3.0 g/10 min                                | 3.0 g/10 min                                | ASTM D1238                   |
|                     | @Load 2.16 kg,<br>Temperature 190 °C        | @Load 4.76 lb,<br>Temperature 374 °F        |                              |

| Mechanical Properties        | Metric        | English    | Comments                        |
|------------------------------|---------------|------------|---------------------------------|
| Film Elongation at Break, MD | 596 %         | 596 %      | 50 µm (2 mil) film; ASTM D882   |
| Film Elongation at Break, TD | 628 %         | 628 %      | 50 µm (2 mil) film; ASTM D882   |
| Secant Modulus, MD           | 0.162 GPa     | 23.5 ksi   | 50 µm (2 mil) film; ASTM D882   |
| Secant Modulus, TD           | 0.171 GPa     | 24.8 ksi   | 50 µm (2 mil) film; ASTM D882   |
| Impact                       | 14.2          | 14.2       | J/mm Spencer Impact; ASTM D3420 |
| Graves Tear Strength         | 69.9 kN/m     | 399 pli    | MD; ASTM D1004                  |
|                              | 78.8 kN/m     | 450 pli    | TD; ASTM D1004                  |
| Elmendorf Tear Strength, MD  | 5.08 g/micron | 129 g/mil  | 50 µm (2 mil) film; ASTM D1922  |
| Elmendorf Tear Strength, TD  | 5.16 g/micron | 131 g/mil  | 50 µm (2 mil) film; ASTM D1922  |
| Dart Drop                    | 3.90 g/micron | 99.1 g/mil | ASTM D1709B                     |
| Seal Strength                | 2700 g/25 mm  | 2700 g/in  | seal bar 150°C.                 |

| Hot Tack Strength<br>Mechanical Properties | 1400 g/25 mm<br>Metric | 1400 g/in<br>English | seal bar 115 °C; Packforsk method.<br>Comments |
|--|------------------------|----------------------|--|
| Film Tensile Strength at Break, MD         | 23.3 MPa               | 3380 psi             | 50 µm (2 mil) film; ASTM D882                  |
| Film Tensile Strength at Break, TD         | 24.8 MPa               | 3600 psi             | 50 µm (2 mil) film; ASTM D882                  |

| Thermal Properties    | Metric  | English | Comments                          |
|-----------------------|---------|---------|-----------------------------------|
| Melting Point         | 92.0 °C | 198 °F  | Freezing Point via DSC/ASTM D3418 |
|                       | 104 °C  | 219 °F  | Upon Melting via DSC/ASTM D3418   |
| Vicat Softening Point | 95.0 °C | 203 °F  | ASTM D1525                        |

| Optical Properties    | Metric | English | Comments                       |
|-----------------------|--------|---------|--------------------------------|
| Haze                  | 3.2 %  | 3.2 %   | ASTM D1003                     |
| Gloss                 | 82 %   | 82 %    | 20°; ASTM D2457                |
| Transmission, Visible | 56 %   | 56 %    | 50 µm (2 mil) film; ASTM D1746 |

| Processing Properties | Metric       | English      | Comments             |
|-----------------------|--------------|--------------|----------------------|
| Nozzle Temperature    | 210 °C       | 410 °F       | Typical Die Temp.    |
| Melt Temperature      | 190 - 218 °C | 374 - 424 °F | blown film equipment |

## Contact Songhan Plastic Technology Co.,Ltd.

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