



# DOW™ LDPE 722

## Low Density Polyethylene Resin

### Overview

DOW™ LDPE 722 is used in flexible packaging and paperboard coating applications such as liquid/juice, laminate tube, condiment pouches, dry foods packaging, snack foods packaging, moist foods packaging, sugar pouches, lidding stock and medical packaging. DOW LDPE extrusion coating resins provide optimal neck-in and draw-down performance with minimal taste/odor contribution.

DOW Polyethylene 722 is a broad molecular weight distribution homopolymer designed to offer good impact strength and crack resistance, with excellent flexibility. The resin has good processability over a wide range of molding conditions.

- Typical applications include caps/closures
- Good impact, ESCR with excellent flexibility

Complies with:

- CANADIAN HPFB NO OBJECTION (WITH LIMITATIONS)
- EU, No 10/2011
- U.S. FDA 21 CFR 177.1520 (c) 2.2
- U.S. FDA DMF

Consult the regulations for complete details.

### Additive

- Antiblock: No
- Slip: No
- Processing Aid: No

| Physical                                                                   | Nominal Value (English)                     | Nominal Value (SI)                      | Test Method                |
|----------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------|----------------------------|
| Density                                                                    | 0.918 g/cm <sup>3</sup>                     | 0.918 g/cm <sup>3</sup>                 | ASTM D792                  |
| Base Density                                                               | 0.918 g/cm <sup>3</sup>                     | 0.918 g/cm <sup>3</sup>                 | Dow Method <sup>1</sup>    |
| Melt Index (190°C/2.16 kg)                                                 | 8.0 g/10 min                                | 8.0 g/10 min                            | ASTM D1238                 |
| Environmental Stress-Cracking Resistance<br>122°F (50°C), 100% Igepal, F50 | < 1.00 hr                                   | < 1.00 hr                               | ASTM D1693 <sup>2</sup>    |
| Mechanical                                                                 | Nominal Value (English)                     | Nominal Value (SI)                      | Test Method                |
| Tensile Strength                                                           |                                             |                                         | ASTM D638 <sup>2</sup>     |
| Yield                                                                      | 1200 psi                                    | 8.27 MPa                                |                            |
| Break                                                                      | 1400 psi                                    | 9.65 MPa                                |                            |
| Tensile Elongation                                                         |                                             |                                         | ASTM D638 <sup>2</sup>     |
| Yield                                                                      | 4.0 %                                       | 4.0 %                                   |                            |
| Break                                                                      | 500 %                                       | 500 %                                   |                            |
| Flexural Modulus - 2% Secant                                               | 34000 psi                                   | 234 MPa                                 | ASTM D790B <sup>2</sup>    |
| Coefficient of Friction                                                    | 0.60                                        | 0.60                                    | ASTM D1894                 |
| Films                                                                      | Nominal Value (English)                     | Nominal Value (SI)                      | Test Method                |
| Seal Initiation Temperature                                                | 221 °F                                      | 105 °C                                  | Dow Method <sup>3</sup>    |
| Water Vapor Transmission Rate                                              | 1.7 g·mil/100in <sup>2</sup> /a<br>tm/24 hr | 0.67 g·mm/m <sup>2</sup> /atm<br>/24 hr | ASTM F1249                 |
| Impact                                                                     | Nominal Value (English)                     | Nominal Value (SI)                      | Test Method                |
| Tensile Impact Strength                                                    | 130 ft·lb/in <sup>2</sup>                   | 273 kJ/m <sup>2</sup>                   | ASTM D1822 <sup>4, 2</sup> |
| Hardness                                                                   | Nominal Value (English)                     | Nominal Value (SI)                      | Test Method                |
| Durometer Hardness (Shore D)                                               | 43                                          | 43                                      | ASTM D2240 <sup>2</sup>    |
| Thermal                                                                    | Nominal Value (English)                     | Nominal Value (SI)                      | Test Method                |
| Deflection Temperature Under Load<br>66 psi (0.45 MPa), Unannealed         | 99.0 °F                                     | 37.2 °C                                 | ASTM D648 <sup>2</sup>     |
| Brittleness Temperature                                                    | -76.0 °F                                    | -60.0 °C                                | ASTM D746 <sup>2</sup>     |
| Vicat Softening Temperature                                                | 190 °F                                      | 87.8 °C                                 | ASTM D1525                 |
| Melting Temperature (DSC)                                                  | 224 °F                                      | 107 °C                                  | Dow Method                 |
| Peak Crystallization Temperature (DSC)                                     | 204 °F                                      | 95.6 °C                                 | Dow Method                 |

| Additional Information         | Nominal Value (English) | Nominal Value (SI) | Test Method |
|--------------------------------|-------------------------|--------------------|-------------|
| Melt Temperature - Recommended | 600 to 630 °F           | 316 to 332 °C      | Dow Method  |

Fabrication Conditions For Extrusion Coating Film:

- Screw Size: 3.5 in. (89 mm); 30:1 L/D
- Screw Type: Single Flight with Maddock Mixer
- Die Gap: 20 mil (0.508 mm)
- Melt Temperature: 625°F (329°C)
- Output: 250 lb/hr
- Screw Speed: 90 rpm

| Extrusion                                  | Nominal Value (English) | Nominal Value (SI)   | Test Method |
|--------------------------------------------|-------------------------|----------------------|-------------|
| Maximum Line Speed                         | 25.0 ft/sec             | 7.6 m/sec            | Dow Method  |
| Minimum Coating Thickness                  | 0.30 mil                | 7.6 µm               | Dow Method  |
| Minimum Coating Weight                     | 4.4 lb/ream             | 7.2 g/m <sup>2</sup> | Dow Method  |
| Neck-in (610°F (321°C), 1.0 mil (25.4 µm)) | 2.0 in                  | 50.8 mm              | Dow Method  |

## Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

<sup>1</sup> Base density is estimated using the assumption that every 1000 ppm of antiblock in the finished product raises the density of the polymer by 0.0006 g/cm<sup>3</sup>. Base density is the estimated density of the polymer if it did not contain any antiblock.

<sup>2</sup> Molded and tested in accordance with ASTM D4976.

<sup>3</sup> Temperature at which 1 lb/in (4.4 N/25.4 mm) heat seal strength is achieved.  
Heat Seal Strengths, Topware HT Tester 0.5 S dwell, 40 psi bar pressure, pull speed 250 mm/sec.

<sup>4</sup> Type S

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| <b>North America</b> |                  | <b>Europe/Middle East</b> | +800-3694-6367 |
| U.S. & Canada:       | 1-800-441-4369   |                           | +31-11567-2626 |
|                      | 1-989-832-1426   | Italy:                    | +800-783-825   |
| Mexico:              | +1-800-441-4369  |                           |                |
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| Colombia:            | +57-1-219-6000   | <b>Asia Pacific</b>       | +800-7776-7776 |
| Mexico:              | +52-55-5201-4700 |                           | +603-7965-5392 |

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