

## Raschig Group AMPLA® 2500 melamine-modified polyester

Category : Polymer , Thermoset , Filled/Reinforced Thermoset

### Material Notes:

Halogen-free, organically and inorganically filled melamine-modified Polyester molding compound. Excellent elasticity and shock resistance, low post-shrinkage, very good electrical values, high heat resistance, very good sliding behavior and wear stability. This product meets the allowed upper limits for heavy metals and PCAs and also conforms to the requirements of the EU directives 2002/95 (RoHS), 2002/96 (WEEE) and 2006/122 (PFOS) Processing: Injection and compression molding Applications: Molded parts in electrical engineering, mainly electrical parts like circuit breakers, relays, switches, contact terminals Information provided by the Raschig Group

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Raschig-Group-AMPLA-2500-melamine-modified-polyester.php](http://www.lookpolymers.com/polymer_Raschig-Group-AMPLA-2500-melamine-modified-polyester.php)

| Physical Properties   | Metric                                               | English                                              | Comments                            |
|-----------------------|------------------------------------------------------|------------------------------------------------------|-------------------------------------|
| Specific Gravity      | 1.60 - 1.70 g/cc                                     | 1.60 - 1.70 g/cc                                     | ISO 1183                            |
| Apparent Bulk Density | 0.700 - 0.900 g/cc                                   | 0.0253 - 0.0325 lb/in³                               | ISO 60                              |
| Water Absorption      | <= 0.80 %<br>@Temperature 23.0 °C,<br>Time 86400 sec | <= 0.80 %<br>@Temperature 73.4 °F,<br>Time 24.0 hour | ISO 62                              |
| Linear Mold Shrinkage | 0.0070 - 0.010 cm/cm                                 | 0.0070 - 0.010 in/in                                 | Injection and Compression; ISO 2577 |

| Mechanical Properties   | Metric                                      | English                                       | Comments                  |
|-------------------------|---------------------------------------------|-----------------------------------------------|---------------------------|
| Tensile Strength, Yield | 30.0 - 50.0 MPa                             | 4350 - 7250 psi                               | Compression; ISO 527      |
|                         | 45.0 - 55.0 MPa                             | 6530 - 7980 psi                               | Injection; ISO 527        |
| Modulus of Elasticity   | 4.00 - 6.00 GPa                             | 580 - 870 ksi                                 | Compression; ISO 527      |
|                         | 5.00 - 7.00 GPa                             | 725 - 1020 ksi                                | Injection; ISO 527        |
| Flexural Strength       | 50.0 - 80.0 MPa                             | 7250 - 11600 psi                              | Compression; ISO 178      |
|                         | 90.0 - 110 MPa                              | 13100 - 16000 psi                             | Injection; ISO 178        |
| Flexural Modulus        | 5.00 - 7.00 GPa                             | 725 - 1020 ksi                                | Compression; ISO 178      |
|                         | 6.00 - 8.00 GPa                             | 870 - 1160 ksi                                | Injection; ISO 178        |
| Compressive Strength    | 150 - 200 MPa                               | 21800 - 29000 psi                             | ISO 604                   |
| Charpy Impact Unnotched | 0.600 - 0.800 J/cm²<br>@Temperature 23.0 °C | 2.86 - 3.81 ft-lb/in²<br>@Temperature 73.4 °F | Compression; ISO 179/ 1eU |
|                         | 1.00 - 1.40 J/cm²<br>@Temperature 23.0 °C   | 4.76 - 6.66 ft-lb/in²<br>@Temperature 73.4 °F | Injection; ISO 179/ 1eU   |

| Mechanical Properties  | Metric                          | English                            | Comments                  |
|------------------------|---------------------------------|------------------------------------|---------------------------|
| Charpy Impact, Notched | 0.150 - 0.250 J/cm <sup>2</sup> | 0.114 - 1.19 ft-lb/in <sup>2</sup> | Compression; ISO 179/ 1eA |
|                        | @Temperature 23.0 °C            | @Temperature 73.4 °F               |                           |
|                        | 0.200 - 0.300 J/cm <sup>2</sup> | 0.952 - 1.43 ft-lb/in <sup>2</sup> | Injection; ISO 179/ 1eA   |
|                        | @Temperature 23.0 °C            | @Temperature 73.4 °F               |                           |

| Thermal Properties                          | Metric                               | English                                   | Comments                 |
|---------------------------------------------|--------------------------------------|-------------------------------------------|--------------------------|
| CTE, linear, Parallel to Flow               | 20.0 - 30.0 µm/m-°C                  | 11.1 - 16.7 µin/in-°F                     | ISO 11359-2              |
|                                             | @Temperature 50.0 - 100 °C           | @Temperature 122 - 212 °F                 |                          |
| Thermal Conductivity                        | 0.600 - 0.700 W/m-K                  | 4.16 - 4.86 BTU-in/hr-ft <sup>2</sup> -°F | ASTM E1461               |
| Maximum Service Temperature, Air            | 140 °C                               | 284 °F                                    | IEC 60216/T1             |
|                                             | @Time 7.20e+7 sec                    | @Time 20000 hour                          |                          |
|                                             | 190 °C                               | 374 °F                                    | IEC 60216/T1             |
|                                             | @Time <=180000 sec                   | @Time <=50.0 hour                         |                          |
| Deflection Temperature at 1.8 MPa (264 psi) | 180 - 200 °C                         | 356 - 392 °F                              | Injection; ISO 75-A      |
| Deflection Temperature at 8.0 MPa           | 80.0 - 110 °C                        | 176 - 230 °F                              | Injection; ISO 75-C      |
| Flammability, UL94                          | V-0                                  | V-0                                       |                          |
|                                             | @Thickness 1.50 mm                   | @Thickness 0.0591 in                      |                          |
| Shrinkage                                   | 0.20 - 0.40 %                        | 0.20 - 0.40 %                             | Post shrinkage; ISO 2577 |
|                                             | @Temperature 110 °C, Time 605000 sec | @Temperature 230 °F, Time 168 hour        |                          |

| Electrical Properties | Metric                     | English                    | Comments    |
|-----------------------|----------------------------|----------------------------|-------------|
| Volume Resistivity    | 1.00e+13 - 1.00e+14 ohm-cm | 1.00e+13 - 1.00e+14 ohm-cm | IEC 60093   |
| Surface Resistance    | 1.00e+12 - 1.00e+13 ohm    | 1.00e+12 - 1.00e+13 ohm    | IEC 60093   |
| Dielectric Constant   | 4.0 - 5.0                  | 4.0 - 5.0                  | IEC 60250   |
|                       | @Frequency 1.00e+6 Hz      | @Frequency 1.00e+6 Hz      |             |
|                       | 5.0 - 7.0                  | 5.0 - 7.0                  | IEC 60250   |
|                       | @Frequency 100 Hz          | @Frequency 100 Hz          |             |
| Dielectric Strength   | 30.0 - 40.0 kV/mm          | 762 - 1020 kV/in           | IEC 60243-1 |

| Electrical Properties      | Metric 0.050          | English 0.050         | Comments       |
|----------------------------|-----------------------|-----------------------|----------------|
| Dissipation Factor         | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz | IEC 60250      |
|                            | 0.10 - 0.20           | 0.10 - 0.20           | IEC 60250      |
|                            | @Frequency 100 Hz     | @Frequency 100 Hz     |                |
| Comparative Tracking Index | 600 V                 | 600 V                 | CTI; IEC 60112 |

| Processing Properties | Metric                      | English                     | Comments |
|-----------------------|-----------------------------|-----------------------------|----------|
| Shelf Life            | 6.00 Month                  | 6.00 Month                  |          |
|                       | @Temperature 15.0 - 25.0 °C | @Temperature 59.0 - 77.0 °F |          |

| Descriptive Properties      | Value   | Comments           |
|-----------------------------|---------|--------------------|
| Arc Resistance              | 4 Stufe | ASTM D495          |
| Glow wire ignitability test | 825/1   | IEC 60695 2-13     |
| Glow-wire flammability test | 960/1   | IEC 60695 2-12     |
| Water Absorption            | <50 mg  | ISO 62; 24h / 23°C |

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