

## SABIC Innovative Plastics Cycoloy® CM6210 PC+ABS

Category : Polymer , Thermoplastic , ABS Polymer , Polycarbonate/ABS Alloy, Unreinforced , Polycarbonate (PC)

### Material Notes:

Cycoloy\* resin CM6210 is a high-modulus flame retardant PC/ABS with non-brominated and non-chlorinated FR system. It can be used for extrusion & thermoforming applications and also for injection molding applications where higher stiffness is needed.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Cycoloy-CM6210-PCABS.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Cycoloy-CM6210-PCABS.php)

| Physical Properties            | Metric  | English   | Comments                                |
|--------------------------------|---|---|---|
| Specific Gravity               | 1.28 g/cc   | 1.28 g/cc   | ASTM D792                               |
| Density                        | 1.27 g/cc   | 0.0459 lb/in <sup>3</sup>                             | ISO 1183                                |
| Moisture Absorption            | 0.100 %   | 0.100 %   | 23°C / 50% RH; ISO 62                   |
| Water Absorption at Saturation | 0.30 %  | 0.30 %  | ISO 62                                  |
| Linear Mold Shrinkage, Flow    | 0.0040 - 0.0060 cm/cm<br>@Thickness 3.20 mm           | 0.0040 - 0.0060 in/in<br>@Thickness 0.126 in          | SABIC Method                            |
| Melt Flow                      | 11.5 g/10 min<br>@Load 5.00 kg,<br>Temperature 260 °C | 11.5 g/10 min<br>@Load 11.0 lb,<br>Temperature 500 °F | ASTM D1238                              |
| Melt Index of Compound         | 9.0 g/10 min<br>@Load 5.00 kg,<br>Temperature 260 °C  | 9.0 g/10 min<br>@Load 11.0 lb,<br>Temperature 500 °F  | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |

| Mechanical Properties     | Metric   | English  | Comments                    |
|---------------------------|----------|----------|-----------------------------|
| Hardness, Rockwell R      | 98       | 98       | ISO 2039-2                  |
| Tensile Strength at Break | 50.0 MPa | 7250 psi | Type I, 5 mm/min; ASTM D638 |
|                           | 50.0 MPa | 7250 psi | 50 mm/min; ISO 527          |
|                           | 65.0 MPa | 9430 psi | 5 mm/min; ISO 527           |
| Tensile Strength, Yield   | 59.0 MPa | 8560 psi | 5 mm/min; ISO 527           |
|                           | 63.0 MPa | 9140 psi | 50 mm/min; ISO 527          |
|                           | 64.0 MPa | 9280 psi | Type I, 5 mm/min; ASTM D638 |
| Elongation at Break       | 80 %     | 80 %     | Type I, 5 mm/min; ASTM D638 |
|                           | 97 %     | 97 %     | 50 mm/min; ISO 527          |

| Mechanical Properties      | 101 %<br>Metric                                 | 101 %<br>English                                    | 5 mm/min; ISO 527<br>Comments      |
|----------------------------|---|---|------------------------------------|
| Elongation at Yield        | 3.5 %   | 3.5 %   | 50 mm/min; ISO 527                 |
|                            | 3.6 %   | 3.6 %   | 5 mm/min; ISO 527                  |
|                            | 4.9 %   | 4.9 %   | Type I, 5 mm/min; ASTM D638        |
| Tensile Modulus            | 3.57 GPa  | 518 ksi   | 5 mm/min; ASTM D638                |
|                            | 3.66 GPa  | 531 ksi   | 1 mm/min; ISO 527                  |
| Flexural Yield Strength    | 106 MPa   | 15400 psi   | 2 mm/min; ISO 178                  |
|                            | 110 MPa   | 16000 psi   | 1.3 mm/min, 50 mm span; ASTM D790  |
| Flexural Modulus           | 3.50 GPa  | 508 ksi   | 1.3 mm/min, 50 mm span; ASTM D790  |
|                            | 3.56 GPa  | 516 ksi   | 2 mm/min; ISO 178                  |
| Izod Impact, Notched       | 5.00 J/cm                                       | 9.37 ft-lb/in                                       | ASTM D256                          |
|                            | 0.900 J/cm<br>@Temperature -30.0 °C             | 1.69 ft-lb/in<br>@Temperature -22.0 °F              | ASTM D256                          |
| Izod Impact, Notched (ISO) | 45.0 kJ/m <sup>2</sup>                          | 21.4 ft-lb/in <sup>2</sup>                          | 80*10*3; ISO 180/1A                |
|                            | 10.0 kJ/m <sup>2</sup><br>@Temperature -30.0 °C | 4.76 ft-lb/in <sup>2</sup><br>@Temperature -22.0 °F | 80*10*3; ISO 180/1A                |
| Charpy Impact, Notched     | 4.50 J/cm <sup>2</sup>                          | 21.4 ft-lb/in <sup>2</sup>                          | Edgew 80*10*3 sp=62mm; ISO 179/1eA |
|                            | 1.00 J/cm <sup>2</sup><br>@Temperature -30.0 °C | 4.76 ft-lb/in <sup>2</sup><br>@Temperature -22.0 °F | Edgew 80*10*3 sp=62mm; ISO 179/1eA |
| Dart Drop, Total Energy    | 45.0 J  | 33.2 ft-lb  | ASTM D3763                         |
|                            | @Temperature 23.0 °C                            | @Temperature 73.4 °F                                |                                    |

| Thermal Properties            | Metric                          | English                        | Comments    |
|-------------------------------|---------------------------------|--------------------------------|-------------|
| CTE, linear, Parallel to Flow | 52.0 µm/m-°C                    | 28.9 µin/in-°F                 | ISO 11359-2 |
|                               | @Temperature -40.0 -<br>40.0 °C | @Temperature -40.0 -<br>104 °F |             |
|                               | 52.0 µm/m-°C                    | 28.9 µin/in-°F                 | ISO 11359-2 |
|                               | @Temperature 23.0 -<br>60.0 °C  | @Temperature 73.4 -<br>140 °F  |             |
|                               | 57.0 µm/m-°C                    | 31.7 µin/in-°F                 | ASTM E 831  |

| Thermal Properties                          | Metric<br>@Temperature -40.0 - 40.0 °C | English<br>@Temperature -40.0 - 104 °F | Comments                           |
|---|--|--|------------------------------------|
| CTE, linear, Transverse to Flow             | 60.0 µm/m-°C                           | 33.3 µin/in-°F                         | ISO 11359-2                        |
|   | @Temperature -40.0 - 40.0 °C           | @Temperature -40.0 - 104 °F            |                                    |
|   | 60.0 µm/m-°C                           | 33.3 µin/in-°F                         | ISO 11359-2                        |
|   | @Temperature 23.0 - 60.0 °C            | @Temperature 73.4 - 140 °F             |                                    |
|   | 70.0 µm/m-°C                           | 38.9 µin/in-°F                         | ASTM E 831                         |
|   | @Temperature -40.0 - 40.0 °C           | @Temperature -40.0 - 104 °F            |                                    |
| Thermal Conductivity                        | 0.300 W/m-K                            | 2.08 BTU-in/hr-ft <sup>2</sup> -°F     | ISO 8302                           |
| Hot Ball Pressure Test                      | <= 95.0 °C                             | <= 203 °F                              | IEC 60695-10-2                     |
| Deflection Temperature at 0.46 MPa (66 psi) | 99.0 °C                                | 210 °F                                 | Edgew 120*10*4 sp=100mm; ISO 75/Be |
| Deflection Temperature at 1.8 MPa (264 psi) | 89.0 °C                                | 192 °F                                 | Edgew 120*10*4 sp=100mm; ISO 75/Ae |
|   | 90.0 °C                                | 194 °F                                 |                                    |
|   | @Thickness 3.20 mm                     | @Thickness 0.126 in                    | unannealed; ASTM D648              |
| Vicat Softening Point                       | 106 °C                                 | 223 °F                                 | Rate B/50; ASTM D1525              |
|   | 112 °C                                 | 234 °F                                 | Rate B/50; ISO 306                 |
|   | 114 °C                                 | 237 °F                                 | Rate B/120; ISO 306                |
| UL RTI, Electrical                          | 60.0 °C                                | 140 °F                                 | UL 746B                            |
| UL RTI, Mechanical with Impact              | 60.0 °C                                | 140 °F                                 | UL 746B                            |
| UL RTI, Mechanical without Impact           | 60.0 °C                                | 140 °F                                 | UL 746B                            |
| Flammability, UL94                          | V-0                                    | V-0                                    | UL 94                              |
|   | @Thickness 1.50 mm                     | @Thickness 0.0591 in                   |                                    |

| Electrical Properties | Metric                    | English                   | Comments  |
|-----------------------|---------------------------|---------------------------|-----------|
| Dielectric Constant   | 2.8                       | 2.8                       | IEC 60250 |
|                       | @Frequency 1.00e+6 Hz     | @Frequency 1.00e+6 Hz     |           |
|                       | 2.9                       | 2.9                       | IEC 60250 |
|                       | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz |           |

| Electrical Properties             | 17.0 kV/mm<br>Metric      | 432 kV/in<br>English      | Comments            |
|-----------------------------------|---------------------------|---------------------------|---------------------|
| <b>Dielectric Strength</b>        | @Thickness 3.20 mm        | @Thickness 0.126 in       | in oil; IEC 60243-1 |
|                                   | 26.0 kV/mm                | 660 kV/in                 | in oil; IEC 60243-1 |
|                                   | @Thickness 1.60 mm        | @Thickness 0.0630 in      |                     |
|                                   | 38.0 kV/mm                | 965 kV/in                 | in oil; IEC 60243-1 |
|                                   | @Thickness 0.800 mm       | @Thickness 0.0315 in      |                     |
| <b>Dissipation Factor</b>         | 0.0030                    | 0.0030                    | IEC 60250           |
|                                   | @Frequency 50.0 - 60.0 Hz | @Frequency 50.0 - 60.0 Hz |                     |
|                                   | 0.0040                    | 0.0040                    | IEC 60250           |
|                                   | @Frequency 1.00e+6 Hz     | @Frequency 1.00e+6 Hz     |                     |
| <b>Comparative Tracking Index</b> | 250 V                     | 250 V                     | IEC 60112           |

| Descriptive Properties           | Value | Comments       |
|----------------------------------|-------|----------------|
| Ball Pressure Test, 75°C +/- 2°C | pass  | IEC 60695-10-2 |

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