



# Makrolon® FR6065

/ MVR (300 °C/1.2 kg) 16 cm³/10 min; low viscosity; flame retardant; impact modified; easy release; injection molding; electrical/electronic; housings- and operating parts

## ISO Shortname

| Property                                            | Test Condition                                    | Unit                | Standard                       | typical Value |
|-----------------------------------------------------|---------------------------------------------------|---------------------|--------------------------------|---------------|
| <b>Rheological properties</b>                       |                                                   |                     |                                |               |
| Melt volume-flow rate                               | 300 °C/ 1.2 kg                                    | cm³/10 min          | ISO 1133                       | 16            |
| Molding shrinkage, parallel/normal                  | Value range based on general practical experience | %                   | b.o. ISO 2577                  | 0.6 - 0.8     |
| <b>Mechanical properties (23 °C/50 % r. h.)</b>     |                                                   |                     |                                |               |
| C Tensile modulus                                   | 1 mm/min                                          | MPa                 | ISO 527-1,-2                   | 2400          |
| C Yield stress                                      | 50 mm/min                                         | MPa                 | ISO 527-1,-2                   | 61            |
| C Yield strain                                      | 50 mm/min                                         | %                   | ISO 527-1,-2                   | 6             |
| Stress at break                                     | 50 mm/min                                         | MPa                 | ISO 527-1,-2                   | 55            |
| Strain at break                                     | 50 mm/min                                         | %                   | b.o. ISO 527-1,-2              | 80            |
| Flexural modulus                                    | 2 mm/min                                          | MPa                 | ISO 178                        | 2500          |
| Flexural strength                                   | 2 mm/min                                          | MPa                 | ISO 178                        | 98            |
| Charpy notched impact strength                      | 23 °C/ 3 mm                                       | kJ/m²               | ISO 21305/based on ISO 179/1eA | 66P           |
| Charpy notched impact strength                      | -30 °C/ 3 mm                                      | kJ/m²               | ISO 21305/based on ISO 179/1eA | 30C           |
| Izod notched impact strength                        | 23 °C/ 3 mm                                       | kJ/m²               | ISO 21305/based on ISO 180/A   | 62P           |
| Izod notched impact strength                        | -30 °C                                            | kJ/m²               | ISO 21305/based on ISO 180/A   | 24C           |
| C Puncture impact properties - maximum force        | 23 °C                                             | N                   | ISO 6603-2                     | 5000          |
| C Puncture impact properties - maximum force        | -30 °C                                            | N                   | ISO 6603-2                     | 6100          |
| C Puncture energy                                   | 23 °C                                             | J                   | ISO 6603-2                     | 52            |
| C Puncture energy                                   | -30 °C                                            | J                   | ISO 6603-2                     | 58            |
| <b>Thermal properties</b>                           |                                                   |                     |                                |               |
| C Temperature of deflection under load              | 1.80 MPa                                          | °C                  | ISO 75-1,-2                    | 119           |
| C Temperature of deflection under load              | 0.45 MPa                                          | °C                  | ISO 75-1,-2                    | 132           |
| C Vicat softening temperature                       | 50 N; 50 °C/h                                     | °C                  | ISO 306                        | 138           |
| Vicat softening temperature                         | 50 N; 120 °C/h                                    | °C                  | ISO 306                        | 140           |
| C Coefficient of linear thermal expansion, parallel | 23 to 55 °C                                       | 10 <sup>-4</sup> /K | ISO 11359-1,-2                 | 0.74          |
| C Coefficient of linear thermal expansion, normal   | 23 to 55 °C                                       | 10 <sup>-4</sup> /K | ISO 11359-1,-2                 | 0.74          |
| C Burning behavior UL 94 (1.5 mm)                   |                                                   | Class               | UL 94                          | V0            |
| Glow wire test (GWFI)                               | 1.0 mm                                            | °C                  | IEC 60695-2-12                 | 960           |
| Glow wire test (GWFI)                               | 1.5 mm                                            | °C                  | IEC 60695-2-12                 | 960           |
| <b>Other properties (23 °C)</b>                     |                                                   |                     |                                |               |
| C Density                                           |                                                   | kg/m³               | ISO 1183-1                     | 1200          |
| <b>Processing conditions for test specimens</b>     |                                                   |                     |                                |               |
| C Injection molding - Melt temperature              |                                                   | °C                  | ISO 294                        | 280           |
| C Injection molding - Mold temperature              |                                                   | °C                  | ISO 294                        | 80            |
| C Injection molding - Injection velocity            |                                                   | mm/s                | ISO 294                        | 200           |





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| Property                                     | Test Condition | Unit | Standard | typical Value |
|----------------------------------------------|----------------|------|----------|---------------|
| Recommended processing and drying conditions |                |      |          |               |
| Melt temperatures                            |                | °C   | -        | 280 - 320     |
| Standard Melt temperature                    |                | °C   | -        | 300           |
| Barrel Temperatures - Rear                   |                | °C   | -        | 250 - 260     |
| Barrel Temperatures - Middle                 |                | °C   | -        | 270 - 280     |
| Barrel Temperatures - Front                  |                | °C   | -        | 280 - 290     |
| Barrel Temperatures - Nozzle                 |                | °C   | -        | 290 - 300     |
| Mold Temperatures                            |                | °C   | -        | 80 - 120      |
| Hold Pressure (% of injection pressure)      |                | %    | -        | 50 - 75       |
| Plastic Back Pressure (specific)             |                | bar  | -        | 50 - 150      |
| Peripheral Screw Speed                       |                | m/s  | -        | 0.05 - 0.2    |
| Shot-to-Cylinder Size                        |                | %    | -        | 30 - 70       |
| Dry Air Drying Temperature                   |                | °C   | -        | 120           |
| Dry Air Drying Time                          |                | h    | -        | 2 - 3         |
| Moisture Content max. (%)                    |                | %    | -        | <= 0.02       |
| Vent Depth                                   |                | mm   | -        | 0.025 - 0.075 |

C These property characteristics are taken from the CAMPUS plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350.

Impact properties: N = non-break, P = partial break, C = complete break

