



# Makrolon® 705 R50

## Preliminary Datasheet /

polycarbonate; medium viscosity; easy release; non-reinforced; contains 50% post consumer PC recycle for natural color; injection molding; electrical/electronic

## ISO Shortname

PC (REC)

| Property                                               | Test Condition                                    | Unit       | Standard                     | typical Value |
|--------------------------------------------------------|---------------------------------------------------|------------|------------------------------|---------------|
| <b>Rheological properties</b>                          |                                                   |            |                              |               |
| C Melt volume-flow rate                                | 280 °C/ 5 kg                                      | cm³/10 min | ISO 1133                     | 30            |
| Melt volume-flow rate                                  | 300 °C/ 1.2 kg                                    | cm³/10 min | ISO 1133                     | 13            |
| C Molding shrinkage, parallel                          | 60x60x2 mm/ 500 bar                               | %          | ISO 294-4                    | 0.68          |
| Molding shrinkage, parallel/normal                     | Value range based on general practical experience | %          | b.o. ISO 2577                | 0.7           |
| <b>Mechanical properties (23 °C/50 % r. h.)</b>        |                                                   |            |                              |               |
| C Tensile modulus                                      | 1 mm/min                                          | MPa        | ISO 527-1,-2                 | 2300          |
| C Yield stress                                         | 50 mm/min                                         | MPa        | ISO 527-1,-2                 | 60            |
| C Yield strain                                         | 50 mm/min                                         | %          | ISO 527-1,-2                 | 6.0           |
| Stress at break                                        | 50 mm/min                                         | MPa        | ISO 527-1,-2                 | 61            |
| Strain at break                                        | 50 mm/min                                         | %          | b.o. ISO 527-1,-2            | 110           |
| Flexural modulus                                       | 2 mm/min                                          | MPa        | ISO 178                      | 2440          |
| Flexural strength                                      | 2 mm/min                                          | MPa        | ISO 178                      | 97            |
| Flexural strain at flexural strength                   | 2 mm/min                                          | %          | ISO 178                      | 6.7           |
| Flexural stress at 3.5 % strain                        | 2 mm/min                                          | MPa        | ISO 178                      | 76            |
| Izod notched impact strength                           | 23 °C/ 3 mm                                       | kJ/m²      | ISO 21305/based on ISO 180/A | 67            |
| Izod notched impact strength                           | 0 °C/ 3 mm                                        | kJ/m²      | ISO 21305/based on ISO 180/A | 17            |
| Izod notched impact strength                           | -10 °C/ 3 mm                                      | kJ/m²      | ISO 21305/based on ISO 180/A | 17            |
| Izod impact strength                                   | 23 °C                                             | kJ/m²      | ISO 180/U                    | N             |
| Izod impact strength                                   | -30 °C                                            | kJ/m²      | ISO 180/U                    | N             |
| <b>Thermal properties</b>                              |                                                   |            |                              |               |
| Vicat softening temperature                            | 50 N; 120 °C/h                                    | °C         | ISO 306                      | 144           |
| <b>Material specific properties</b>                    |                                                   |            |                              |               |
| Haze                                                   | 2 mm                                              | %          | ISO 14782                    | 6             |
| C Luminous transmittance (clear transparent materials) | 2 mm                                              | %          | ISO 13468-2                  | 74            |
| <b>Recommended processing and drying conditions</b>    |                                                   |            |                              |               |
| Melt temperatures                                      |                                                   | °C         | -                            | 280 - 320     |
| Mold Temperatures                                      |                                                   | °C         | -                            | 80 - 120      |
| Dry Air Drying Temperature                             |                                                   | °C         | -                            | 120           |
| Dry Air Drying Time                                    |                                                   | h          | -                            | 4             |
| Moisture Content max. (%)                              |                                                   | %          | -                            | 0.02          |

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

