

# TOPAS® 6013S-04

Cyclic Olefin Copolymer  
Polyplastics Co., Ltd.

Message:  
Standard Grade

| General Information                                |               |                        |                |
|----------------------------------------------------|---------------|------------------------|----------------|
| Features                                           | Copolymer     |                        |                |
| UL File Number                                     | E177491       |                        |                |
| Part Marking Code (ISO 11469)                      | >COC<         |                        |                |
| Physical                                           | Nominal Value | Unit                   | Test Method    |
| Density                                            | 1.02          | g/cm <sup>3</sup>      | ISO 1183       |
| Melt Volume-Flow Rate (MVR) (260°C/2.16 kg)        | 14.0          | cm <sup>3</sup> /10min | ISO 1133       |
| Water Absorption (Saturation, 23°C)                | 0.010         | %                      | ISO 62         |
| Mechanical                                         | Nominal Value | Unit                   | Test Method    |
| Tensile Modulus                                    | 2900          | MPa                    | ISO 527-2/1A/1 |
| Tensile Stress (Break)                             | 63.0          | MPa                    | ISO 527-2/1A/5 |
| Tensile Strain (Break)                             | 2.7           | %                      | ISO 527-2/1A/5 |
| Impact                                             | Nominal Value | Unit                   | Test Method    |
| Charpy Notched Impact Strength                     | 1.8           | kJ/m <sup>2</sup>      | ISO 179/1eA    |
| Charpy Unnotched Impact Strength                   | 15            | kJ/m <sup>2</sup>      | ISO 179/1eU    |
| Thermal                                            | Nominal Value | Unit                   | Test Method    |
| Heat Deflection Temperature (0.45 MPa, Unannealed) | 130           | °C                     | ISO 75-2/B     |
| Glass Transition Temperature <sup>1</sup>          | 138           | °C                     | ISO 11357-2    |
| Vicat Softening Temperature                        | 137           | °C                     | ISO 306/B50    |
| Electrical                                         | Nominal Value | Unit                   | Test Method    |
| Volume Resistivity                                 | > 1.0E+14     | ohms · cm              | IEC 60093      |
| Relative Permittivity                              |               |                        | IEC 60250      |
| 1 kHz                                              | 2.35          |                        |                |
| 10 kHz                                             | 2.35          |                        |                |
| 1.00 GHz                                           | 2.30          |                        |                |
| Comparative Tracking Index                         | > 600         | V                      | IEC 60112      |
| Flammability                                       | Nominal Value | Unit                   | Test Method    |
| Flame Rating                                       | HB            |                        | UL 94          |
| Optical                                            | Nominal Value | Unit                   | Test Method    |
| Refractive Index                                   | 1.530         |                        | ISO 489        |
| Transmittance (2000 μm)                            | 91.0          | %                      | ISO 13468-1    |
| NOTE                                               |               |                        |                |
| 1.                                                 | 10°C/min      |                        |                |

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