

# POLYSTONE® M

Ultra High Molecular Weight Polyethylene

Röchling Engineering Plastics SE & Co. KG

## Message:

Product characteristics

High abrasion and wear resistant

Low coefficient of friction

High impact strength

Typical field of application

Bottling and food industry

Mechanical engineering

Bearing and packing industry

| General Information                          |                          |                   |             |
|----------------------------------------------|--------------------------|-------------------|-------------|
| Features                                     | Low friction coefficient |                   |             |
|                                              | Impact resistance, high  |                   |             |
|                                              | Good wear resistance     |                   |             |
|                                              | Good wear resistance     |                   |             |
| Uses                                         | Engineering application  |                   |             |
|                                              | Bottle                   |                   |             |
|                                              | Food service sector      |                   |             |
| Physical                                     | Nominal Value            | Unit              | Test Method |
| Density                                      | 0.940                    | g/cm <sup>3</sup> | ISO 1183    |
| Water Absorption (Equilibrium, 23°C, 50% RH) | < 0.010                  | %                 | ISO 62      |
| Hardness                                     | Nominal Value            | Unit              | Test Method |
| Durometer Hardness (Shore D)                 | 63                       |                   | ISO 868     |
| Mechanical                                   | Nominal Value            | Unit              | Test Method |
| Tensile Modulus                              | 700                      | MPa               | ISO 527-2   |
| Tensile Stress (Yield)                       | 21.0                     | MPa               | ISO 527-2   |
| Tensile Strain (Break)                       | > 50                     | %                 | ISO 527-2   |
| Wear Resistance - Sand-slurry method         | 80.0                     |                   |             |
| Heat Deflection Temperature - Vicat B        | 79                       | °C                | ISO 306     |
| Impact                                       | Nominal Value            | Unit              | Test Method |
| Charpy Notched Impact Strength               | No Break                 |                   | ISO 179     |
| Thermal                                      | Nominal Value            | Unit              | Test Method |
| Continuous Use Temperature <sup>1</sup>      | < 130                    | °C                |             |
| Melting Temperature                          | 135                      | °C                | ISO 11357-3 |
| CLTE - Flow                                  | 1.5E-4 - 2.3E-4          | cm/cm/°C          | DIN 53752   |
| Specific Heat                                | 1900                     | J/kg/°C           | DIN 52612   |
| Thermal Conductivity                         | 0.40                     | W/m/K             | DIN 52612   |

| Electrical                                    | Nominal Value | Unit    | Test Method |
|-----------------------------------------------|---------------|---------|-------------|
| Surface Resistivity                           | > 1.0E+12     | ohms    | IEC 60093   |
| Volume Resistivity                            | > 1.0E+13     | ohms·cm | IEC 60093   |
| Dielectric Strength                           | 30            | kV/mm   | IEC 60243-1 |
| Dielectric Constant                           | 2.30          |         | IEC 60250   |
| Dissipation Factor (1 MHz)                    | 1.0E-4        |         | IEC 60250   |
| Comparative Tracking Index                    | 600           | V       | IEC 60112   |
| Flammability                                  | Nominal Value | Unit    | Test Method |
| Flame Rating                                  |               |         | UL 94       |
| 3.00 mm                                       | HB            |         | UL 94       |
| 6.00 mm                                       | HB            |         | UL 94       |
| Additional Information                        |               |         |             |
| Service Temperature (Long Term): -250 to 80°C |               |         |             |
| NOTE                                          |               |         |             |
| 1.                                            | Short Term    |         |             |

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