

TECHNICAL DATA – PE1000 NATURAL/BLACK  
HIGH MOLECULAR WEIGHT POLYETHYLENE

| <b><i>MATERIAL PROPERTIES</i></b>                    | <b><i>STANDARD</i></b> | <b><i>UNIT</i></b>   | <b><i>VALUE</i></b>        |                           |
|--|------------------------|----------------------|----------------------------|---------------------------|
|  |                        |                      | <b>PE1000 virgin</b>       | <b>PE1000 regen</b>       |
| MOLECULAR WEIGHT                                     |                        | g/mol                | approx 0.5*10 <sup>6</sup> | 0.6*10 <sup>6</sup>       |
| DENSITY  | ISO 1183               | kg/m <sup>3</sup>    | 950                        | 930                       |
| WATER ABSORPTION<br>(@23 °C Saturation)              | ISO 62                 | %                    | <0.01                      | <0.01                     |
| <b><i>MECHANICAL</i></b>                             |                        |                      |                            |                           |
| TENSILE STRESS AT YIELD                              | ISO 527                | MPa                  | > 20                       | >15                       |
| ELONGATION AT BREAK                                  | ISO 527                | %                    | > 450                      | >200                      |
| TENSILE MODULUS                                      | ISO 527                | MPa                  | 800                        | 600                       |
| IMPACT STRENGTH<br>(Charpy) @ 23°C                   | ISO 179                | (kJ/m <sup>2</sup> ) | no break                   | no break                  |
| NOTCHED IMPACT STRENGTH<br>(Charpy) @ 23°C           | ISO 11542-2            | (kJ/m <sup>2</sup> ) | > 170                      | >80                       |
| BALL INDENTATION HARDNESS                            | ISO2039-1              | (N/mm <sup>2</sup> ) | 30-35                      | 30-35                     |
| SHORE HARDNESS                                       | ISO 868                | -                    | 62-68                      | 60-65                     |
| COEFFICIENT OF FRICTION                              | -                      | -                    | approx 0.25                | approx 0.2                |
| ABRASION (SAND SLURRY)                               | -                      | %                    | < 100                      | 150                       |
| <b><i>THERMAL</i></b>                                |                        |                      |                            |                           |
| MELTING POINT  | ISO 3146               | °C                   | 135-138                    | 135-138                   |
| SOFTENING POINT                                      | ISO 306                | °C                   | 80                         | 80                        |
| COEFFICIENT OF LINEAR<br>THERMAL EXPANSION (23-80°C) | ISO 11359              | K <sup>-1</sup>      | approx 2*10 <sup>-4</sup>  | approx 2*10 <sup>-4</sup> |
| THERMAL CONDUCTIVITY                                 | ISO 52612              | W/m*K                | approx 0.4                 | approx 0.4                |
| MAX WORK TEMP  | -                      | °C                   | 80                         | 80                        |
| MAX BRIEF TEMP                                       | -                      | °C                   | 90                         | 90                        |
| MIN TEMP   | -                      | °C                   | -200                       | -150                      |
| <b><i>ELECTRICAL</i></b>                             |                        |                      |                            |                           |
| DISSIPATION FACTOR (100HZ)                           | IEC 60250              | -                    | 2.1* 10 <sup>-4</sup>      |                           |
| VOLUME RESISTIVITY                                   | IEC 60093              | Ohm*m                | > 10 <sup>12</sup>         | > 10 <sup>3</sup>         |
| SURFACE RESISTIVITY                                  | IEC 60093              | Ohm                  | > 10 <sup>12</sup>         | > 10 <sup>4</sup>         |
| DIELECTRIC STRENGTH                                  | IEC 60243              | kV/mm                | 40                         |                           |
| <b><i>PHYSIOLOGICAL</i></b>                          |                        |                      |                            |                           |
| FOOD CONFORMITY TO<br>EU DIRECTIVE 2002/72/EC        |                        |                      | YES                        | NO                        |
| FDA REG 21CFR177.1520                                |                        |                      | YES                        | NO                        |
| FDA REG 21CFR178.2010                                |                        |                      | YES                        | NO                        |
| FDA REG 21CFR178.3297                                |                        |                      | YES                        | NO                        |

TECHNICAL DATA GIVEN ABOVE REFERS TO A 40mm THICK SHEET, THIS DATA MAY VARY SLIGHTLY DEPENDING ON MATERIAL THICKNESS.

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