



## Polystone® M (UHMW-PE)

### Ultra High Molecular Weight Polyethylene

#### Polystone® M Physical Properties

| Physical Properties                         |                    |           | Polystone® M (UHMW-PE)            |                        |                        |                        |
|---|--------------------|-----------|-----------------------------------|------------------------|------------------------|------------------------|
| Property                                    | Units              | ASTM Test | Natural                           | XL Cross linked        | MPG Glass filled       | Reprocessed            |
| Density                                     | gm/cm <sup>3</sup> | D792      | .930                              | .932                   | .96                    | .935                   |
| Tensile strength at yield 73°F              | psi                | D638      | 3100                              | 2900                   | 2700                   | 3000                   |
| Elongation 73°F                             | %                  | D638      | 350                               | 330                    | 265                    | 290                    |
| * Relative volumetric abrasion loss         | *                  | *         | 100                               | 85                     | 75                     | 90                     |
| Coefficient of friction 73°F on steel       | -                  | -         | Static .15-.20<br>Dynamic .10-.20 | .15-.20<br>.08-.18     | .15-.20<br>.10-.20     | .17-.20<br>.10-.20     |
| IZOD impact strength 73°F                   | KJ/m <sup>2</sup>  | D4020-96  | 125                               | 120                    | 110                    | 96                     |
| Hardness 73°F                               | -                  | D785      | Shore D 62-66                     | D 62-66                | D 63-67                | D 63-69                |
| Melting point                               | °F                 | D789      | 275°-280°                         | 275°-280°              | 275°-280°              | 275°-280°              |
| Coefficient of linear thermal expansion     | 1/K                | D696      | 2.0 x 10 <sup>-4</sup>            | 1.0 x 10 <sup>-4</sup> | 1.0 x 10 <sup>-4</sup> | 1.9 x 10 <sup>-4</sup> |
| Continuous service temperature in air (max) | °F                 | -         | 180                               | 180                    | 180                    | 180                    |
| Volume resistivity                          | Ohm/cm             | D257      | >10 <sup>15</sup>                 | >10 <sup>15</sup>      | >10 <sup>15</sup>      | >10 <sup>15</sup>      |
| Dielectric constant (10 <sup>3</sup> Hz)    | -                  | D150      | 2.3                               | 2.3                    | 2.3                    | -                      |
| Dielectric strength                         | KV/mm              | D149      | 40                                | 40                     | 40                     | 40                     |

\* Industry standard testing method using slurry of 60% aluminum oxide and 40% water at a rotation speed of 1750 rpm for 2 hours. Results indicate the ability of each material, in relation to Natural(=100), to resist abrasion under typical UHMW-PE applications. A lower number indicates better abrasion resistance.

The information listed herein is stated to the best of our knowledge and is intended to provide a general guideline for Polystone® M and its uses. The values given are based on laboratory testing backed with global industry experience. All properties in this table have performed equal or better in laboratory testing. However, the data should not be considered as guaranteed specific properties. Suggested applications are provided for information only and are not specific recommendations.