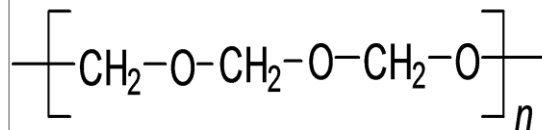


## Polyacetal Homopolymer (POM w/ 20% glass reinforcement)



### SPECIFICATIONS

| Property                                     | Condition                 | Spec      | Value                           |
|--|---------------------------|-----------|---------------------------------|
| Modulus of Elasticity (tensile test)         | @ 73°F                    | ASTM D638 | 350,000 psi                     |
| Tensile Strength at Yield                    | @ 73°F                    | ASTM D638 | 7,700 psi                       |
| Elongation at Break                          | @ 73°F                    | ASTM D638 | 10%                             |
| Flexural Strength                            | @ 73°F                    | ASTM D790 | 14,500 psi                      |
| Modulus of Elasticity (flexural test)        | @ 73°F                    | ASTM D790 | 650,000 psi                     |
| Compression strength                         | @ 73°F, 1% strain         | ASTM D695 | 1,500 psi                       |
| Compression strength                         | @ 73°F, 10% strain        | ASTM D695 | 14,500 psi                      |
| Notched impact strength (Izod)               |                           | ASTM D256 | 0.90 ft-lbs/in                  |
| Rockwell Hardness                            |                           | ASTM D785 | 87 M                            |
| Thermal Properties<br>Melting temperature    |                           |           | 347°F                           |
| Deflection temperature                       | @264 psi<br>@66 psi       | ASTM D648 | 311°F<br>329°F                  |
| Service temperature                          | Long Term<br>Intermittent |           | 185°F<br>300°F                  |
| Thermal Expansion (CLTE)                     |                           |           | 4.72 *10 <sup>-5</sup> in/in/°F |
| Electrical Properties<br>Surface Resistivity | @ 73°F                    | ASTM D257 | 200 e+15 Ω                      |
| Dielectric Strength                          | @73°F                     | ASTM D149 | 452 V/mil                       |
| Dielectric Constant                          | @100 MHz;<br>73°F         | ASTM D150 | 3.8                             |
| Moisture absorption                          | @ 24 hrs, 73°F            | ASTM D570 | 0.15 %                          |

### DESCRIPTION

ML113 is a POM material with hardness 87M, specially compounded with glass reinforcement. Acetal or Polyoxymethylene (POM) belongs to the polyether family which contains carbon-oxygen-carbon (-C-O-C-) ether linkages in the polymer backbone. Acetal or POM refers to the polyether with only one carbon (methylene) in between ether linkages. To improve its low thermal stability for commercial use, POM has to be chemically modified by one of two means. The first is to modify the ends of polymer chains to yield the corresponding POM homopolymer (POM-H). The second method is to add 1%-2% ethylene oxide to the polymer chain that results in POM copolymer (POM-C). POM possesses a simple regular backbone, thus it is a highly crystalline polymer. This chemical and morphological structure leads to high mechanical strength, low moisture absorption, high dimensional stability, high creep resistant, and good chemical resistance.