

Quadrant EPP TIVAR® ECO UHMW-PE, Recycled (ASTM Product Data Sheet)

Category : Polymer , Renewable/Recycled Polymer , Thermoplastic , Polyethylene (PE) , HDPE , High Density Polyethylene (HDPE), UHMW PE Ultra High Molecular Weight

Material Notes:

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-TIVAR-ECO-UHMW-PE-Recycled-ASTM-Product-Data-Sheet.php

| Physical Properties | Metric | English | Comments |
|--------------------------------|------------|------------|-------------------------------|
| Specific Gravity | 0.930 g/cc | 0.930 g/cc | ASTM D792 |
| Water Absorption | <= 0.010 % | <= 0.010 % | Immersion, 24hr; ASTM D570(2) |
| Water Absorption at Saturation | <= 0.010 % | <= 0.010 % | ASTM D570 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------------|-----------------|-----------------|------------------------------|
| Hardness, Shore D | 67 | 67 | ASTM D2240 |
| Tensile Strength | 27.6 MPa | 4000 psi | ASTM D638 |
| Elongation at Break | 200 % | 200 % | ASTM D638 |
| Tensile Modulus | 0.676 GPa | 98.0 ksi | ASTM D638 |
| Flexural Strength | 13.8 MPa | 2000 psi | ASTM D790 |
| Flexural Modulus | 0.558 GPa | 81.0 ksi | ASTM D790 |
| Compressive Strength | 19.3 MPa | 2800 psi | 10% Def.; ASTM D695 |
| Compressive Modulus | 0.414 GPa | 60.0 ksi | ASTM D695 |
| Izod Impact, Notched | NB | NB | ASTM D256 |
| Coefficient of Friction, Dynamic | 0.14 | 0.14 | Dry vs. Steel; QTM 55007 |
| Sand Slurry | 18 | 18 | 1018 steel = 100; ASTM D4020 |
| Limiting Pressure Velocity | 0.105 MPa-m/sec | 3000 psi-ft/min | 4:1 safety factor; QTM 55007 |

| Thermal Properties | Metric | English | Comments |
|----------------------------------|---|---|------------------------------|
| CTE, linear | 198 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ | 110 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ | ASTM E831 |
| | @Temperature -40.0 - 149 $^\circ\text{C}$ | @Temperature -40.0 - 300 $^\circ\text{F}$ | |
| Melting Point | 135 $^\circ\text{C}$ | 275 $^\circ\text{F}$ | Crystalline Peak; ASTM D3418 |
| Maximum Service Temperature, Air | 82.2 $^\circ\text{C}$ | 180 $^\circ\text{F}$ | Continuous |

| Thermal Properties <small>Flammability Temperature at 1.8 MPa (264 psi)</small> | Metric | English | Comments |
|--|------------------------------|-------------------------------|----------|
| Flammability, UL94 | HB @Thickness 3.17 mm | HB @Thickness 0.125 in | |

| Electrical Properties | Metric | English | Comments |
|--------------------------------|-----------------|-----------------|----------------|
| Surface Resistivity per Square | <= 1.00e+13 ohm | <= 1.00e+13 ohm | EOS/ESD S11.11 |

| Compliance Properties | Metric | English | Comments |
|-----------------------|--------|---------|----------|
| 3A-Dairy | No | No | |
| Canada AG | No | No | |
| FDA | No | No | |
| NSF | No | No | |
| USDA | No | No | |
| USP Class VI | No | No | |

| Chemical Resistance Properties | Metric | English | Comments |
|---------------------------------|--------------|--------------|----------|
| Acids, Strong (pH 1-3) | Limited | Limited | |
| Acids, Weak | Acceptable | Acceptable | |
| Alcohols | Acceptable | Acceptable | |
| Alkalies, Strong (pH 11-14) | Acceptable | Acceptable | |
| Alkalies, Weak | Acceptable | Acceptable | |
| Chlorinated Solvents | Acceptable | Acceptable | |
| Conductive / Static Dissipative | No | No | |
| Continuous Sunlight | Limited | Limited | |
| Hot Water / Steam | Limited | Limited | |
| Hydrocarbons - Aliphatic | Acceptable | Acceptable | |
| Hydrocarbons - Aromatic | Unacceptable | Unacceptable | |
| Inorganic Salt Solutions | Acceptable | Acceptable | |
| Ketones, Esters | Limited | Limited | |

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