Marco Compound # E1097
70 Durometer, Black, FDA, NSF61, 3A, Chloramine Resistant EPDM
Technical Datasheet

Common Names:
Ethylene-Propylene (EP, EPDM)

General Description:
EPDM rubber (ethylene propylene diene monomer rubber) is an elastomer which is characterized by wide range of applications and good chemical resistance.

Features:
- FDA, NSF61, and 3A Sanitary compliant
- Chloramine resistant
- Good heat and compression resistance.
- Resistant to ketones, hot and cold water, steam, alkalis, polar solvents, ozone, sunlight, alcohols, glycol engine coolant and Skydrol (phosphate ester hydraulic fluid).

Limitations:
- Not recommended for oils, gasoline, kerosene, aromatic and aliphatic hydrocarbon, halogenated solvents, concentrated acids, non-polar solvents, petroleum oils and aromatic fuels.

Cure System:
- Peroxide

Service Temperature:
-65 to 300°F (-54 to 150°C)

Specification:
ASTM D2000 M4CA710 A25 B35 EA14 F17

PHYSICAL PROPERTY STANDARDS

<table>
<thead>
<tr>
<th>ORIGINAL PROPERTIES</th>
<th>D2000 Specification Requirements</th>
<th>Typical Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness, Shore A</td>
<td>70 +/- 5</td>
<td>72</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td>Tensile Strength, MPa (psi)</td>
<td>10.0 (1,450)</td>
<td>15.30 (2,200)</td>
</tr>
<tr>
<td>Ultimate Elongation, % - (Z1)</td>
<td>125</td>
<td>190</td>
</tr>
<tr>
<td>Modulus at 100% elongation, psi - (Z2)</td>
<td>Report</td>
<td>807</td>
</tr>
<tr>
<td>Specific Gravity – (Z3)</td>
<td>Report</td>
<td>1.12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEAT AGING – A25, ASTM D 865 (70 hrs. @ 125°C)</th>
<th>D2000 Specification Requirements</th>
<th>Typical Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness Change, points, max.</td>
<td>10</td>
<td>+2</td>
</tr>
<tr>
<td>Tensile Strength Change, %, max.</td>
<td>-20</td>
<td>-2</td>
</tr>
<tr>
<td>Ultimate Elongation Change, %, max.</td>
<td>-40</td>
<td>-11</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
<th>Typical Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Set, % max.</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>FLUID RESISTANCE, Water</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>Volume Change, %</td>
<td>+/- 5</td>
<td>0.4</td>
</tr>
<tr>
<td>LOW TEMPERATURE RESISTANCE</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>TEAR RESISTANCE</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>FLUID AGED, Chloramine (100 ppm)</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>Hardness Change, points</td>
<td>Report</td>
<td>-4</td>
</tr>
<tr>
<td>Tensile Strength Change, %</td>
<td>Report</td>
<td>+12</td>
</tr>
<tr>
<td>Ultimate Elongation Change, %, max.</td>
<td>Report</td>
<td>+8</td>
</tr>
<tr>
<td>Volume Change, %</td>
<td>Report</td>
<td>+2.7</td>
</tr>
<tr>
<td>FLUID AGED, Chloramine (100 ppm) – D471, (1344 hrs. @ 80°C)</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>Hardness Change, points</td>
<td>Report</td>
<td>-4</td>
</tr>
<tr>
<td>Tensile Strength Change, %</td>
<td>Report</td>
<td>+8</td>
</tr>
<tr>
<td>Ultimate Elongation Change, %, max.</td>
<td>Report</td>
<td>+7</td>
</tr>
<tr>
<td>Volume Change, %</td>
<td>Report</td>
<td>+2</td>
</tr>
<tr>
<td>FLUID AGED, Chloramine – D471, (24 hrs. @ 70°C)</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>Hardness Change, points</td>
<td>Report</td>
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</tr>
<tr>
<td>Tensile Strength Change, %</td>
<td>Report</td>
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</tr>
<tr>
<td>Ultimate Elongation Change, %, max.</td>
<td>Report</td>
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</tr>
<tr>
<td>Volume Change, %</td>
<td>Report</td>
<td>+0.7</td>
</tr>
<tr>
<td>FLUID AGED, Chloramine – D471, (672 hrs. @ 70°C)</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>Hardness Change, points</td>
<td>Report</td>
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</tr>
<tr>
<td>Tensile Strength Change, %</td>
<td>Report</td>
<td>+6</td>
</tr>
<tr>
<td>Ultimate Elongation Change, %, max.</td>
<td>Report</td>
<td>+6.4</td>
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<tr>
<td>Volume Change, %</td>
<td>Report</td>
<td>+0.7</td>
</tr>
<tr>
<td>FLUID AGED, Tap Water – D471, (24 hrs. @ 100°C)</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>Hardness Change, points</td>
<td>Report</td>
<td>-4</td>
</tr>
<tr>
<td>Tensile Strength Change, %</td>
<td>Report</td>
<td>+7</td>
</tr>
<tr>
<td>Ultimate Elongation Change, %, max.</td>
<td>Report</td>
<td>+1.2</td>
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<tr>
<td>Volume Change, %</td>
<td>Report</td>
<td>+1.1</td>
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</tbody>
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<thead>
<tr>
<th>FLUID AGED, Tap Water –D471, (672 hrs. @ 100°C)</th>
<th>D2000 Specification Requirements</th>
<th>Typical Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness Change, points</td>
<td>Report</td>
<td>-4</td>
</tr>
<tr>
<td>Tensile Strength Change, %</td>
<td>Report</td>
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<tr>
<td>Ultimate Elongation Change, %, max.</td>
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<tr>
<td>Volume Change, %</td>
<td>Report</td>
<td>+1.4</td>
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