MATERIAL PROPERTIES

Color: Black
Composition: Carbon fiber with a nitrile binder
Fluid Services¹: Saturated steam², water, oils, gasoline, aliphatic hydrocarbons and most refrigerants

Temperature², °F (°C)
- Minimum: -100 (-73)
- Continuous Max: +650 (+343)
- Maximum: +900 (+482)

Pressure², Maximum, psig (bar): 2000 (138)
P x T (max.)², psig x °F (bar x °C)
- 1/32 and 1/16": 700,000 (25,000)
- 1/8": 350,000 (12,000)

Meets Specification: Fire Safe

TYPICAL PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>ASTM F36 Compressibility, range, %:</th>
<th>ASTM F36 Recovery, %:</th>
<th>ASTM F38 Creep Relaxation, %:</th>
<th>ASTM F152 Tensile, Across Grain, psi (N/mm²):</th>
<th>ASTM F1315 Density, lbs./ft.³ (grams/cm³):</th>
<th>ASTM F433 Thermal Conductivity (K), W/m°K (Btu·in./hr.·ft.²·°F):</th>
<th>ASTM D149 Dielectric Properties, range, volts/mil.</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 1/32&quot;</td>
<td>7-17</td>
<td>55</td>
<td>15</td>
<td>1800 (12)</td>
<td>105 (1.68)</td>
<td>0.50-0.60 (3.50-4.15)</td>
<td>1/16&quot;</td>
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</tbody>
</table>

Sample conditioning
- 3 hours at 250°F: 1/16" <2 1/8" <2
- 96 hours at 100% Relative Humidity: 1/16" - 1/8" -

ASTM F586 Design Factors
- “m” factor: 6.5 8
- “y” factor, psi (N/mm²): 2550 (17.6) 2800 (19.3)

ROTT Gasket Constants, 1/16":
- Gb=1,591 a=0.239 Gs=9.3

SEALING CHARACTERISTICS

<table>
<thead>
<tr>
<th>Property</th>
<th>ASTM F37B Fuel A</th>
<th>ASTM F37B Nitrogen</th>
<th>DIN 3535-4 Gas Permeability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasket Load, psi (N/mm²):</td>
<td>500 (3.5)</td>
<td>3000 (20.7)</td>
<td>4640 (32)</td>
</tr>
<tr>
<td>Internal Pressure, psig (bar):</td>
<td>9.8 (0.7)</td>
<td>30 (2)</td>
<td>580 (40)</td>
</tr>
<tr>
<td>Leakage</td>
<td>0.1 ml/hr.</td>
<td>0.1 ml/hr.</td>
<td>0.015 cc/min</td>
</tr>
</tbody>
</table>

IMMERSION PROPERTIES - ASTM F146 Fluid Resistance after Five Hours

<table>
<thead>
<tr>
<th>Property</th>
<th>ASTM #1 Oil 300°F (150°C)</th>
<th>ASTM IRM #903 300°F (150°C)</th>
<th>ASTM Fuel A 70-85°F (20-30°C)</th>
<th>ASTM Fuel B 70-85°F (20-30°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness Increase, (%)</td>
<td>0-5</td>
<td>0-10</td>
<td>0-5</td>
<td>0-10</td>
</tr>
<tr>
<td>Weight Increase, %</td>
<td>&lt;10</td>
<td>-</td>
<td>&lt;7</td>
<td>&lt;15</td>
</tr>
<tr>
<td>Tensile Loss, (%)</td>
<td>-</td>
<td>&lt;35</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes:
- This is a general guide and should not be the sole means of selecting or rejecting this material. ASTM test results in accordance with ASTM F-104; properties based on 1/32" (0.8mm) sheet thickness unless otherwise mentioned.
- Values do not constitute specification Limits
- See Garlock chemical resistance guide.
- Based on ANSI RF flanges at our preferred torque. When approaching maximum pressure, continuous operating temperature, minimum temperature or 50% of maximum P x T, consult Garlock Applications Engineering. Minimum temperature rating is conservative.
- Minimum recommended assembly stress = 4,800psi. Preferred assembly stress = 6,000-10,000psi. Gasket thickness of 1/16" strongly preferred. Retorque the bolts/studs prior to pressurizing the assembly. For saturated steam above 150psig or superheated steam, consult Garlock Engineering.
- A9: Leakage in Fuel A (Isooctane), Gasket Load = 500psi (3.5N/mm2), Pressure = 9.8psig (0.7bar): Typical = 0.1ml/hr, Max = 0.5ml/hr. A9: Leakage in Nitrogen, Gasket Load = 3,000psi (20.7N/mm2), Pressure = 30psig (2bar): Typical = 0.1ml/hr, Max = 0.5ml/hr.

¹ See Garlock chemical resistance guide.
² Based on ANSI RF flanges at our preferred torque. When approaching maximum pressure, continuous operating temperature, minimum temperature or 50% of maximum P x T, consult Garlock Applications Engineering. Minimum temperature rating is conservative.
³ Minimum recommended assembly stress = 4,800psi. Preferred assembly stress = 6,000-10,000psi. Gasket thickness of 1/16" strongly preferred. Retorque the bolts/studs prior to pressurizing the assembly. For saturated steam above 150psig or superheated steam, consult Garlock Engineering.
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