



Garlock 9900

MATERIAL PROPERTIES*

| | |
|---|---|
| Color: | Mahogany |
| Composition: | Graphite fibers with a nitrile binder |
| Fluid Services¹: | Saturated steam ³ , water, oil, inert gases, aliphatic hydrocarbons and gasoline |
| Temperature², °F (°C) | |
| Minimum: | -100 (-73) |
| Continuous Max: | +650 (+343) |
| Maximum: | +1000 (+537) |
| 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: | ABS (American Bureau of Shipping), STR 508(5) Rev. 2 and Fire Safe |

PHYSICAL PROPERTIES*

| | | | | |
|-------------------|--|---------------------------------------|-------------|---------|
| ASTM F36 | Compressibility, range, %: | 7-17 | | |
| ASTM F36 | Recovery, %: | 65 | | |
| ASTM F38 | Creep Relaxation, %: | 9 | | |
| ASTM F152 | Tensile, Across Grain, psi (N/mm²): | 1800 (12) | | |
| ASTM F1315 | Density, lbs./ft.³ (grams/cm³): | 110 (1.76) | | |
| ASTM F433 | Thermal Conductivity (K), W/m²K (Btu.-in./hr.-ft.².°F): | 0.87 (6.0) | | |
| ASTM D149 | Dielectric Properties, range, volts/mil. | | | |
| | Sample conditioning | 1/16" | 1/8" | |
| | 3 hours at 250°F: | <2 | - | |
| | 96 hours at 100% Relative Humidity: | - | - | |
| ASTM F586 | Design Factors | 1/16" | 1/8" | |
| | "m" factor: | 4.5 | 6 | |
| | "y" factor, psi (N/mm ²): | 4100 (28.3) | 4100 (28.3) | |
| ROTT | Gasket Constants, 1/16": | Gb=2,322 | a=0.133 | Gs=18.0 |
| ASTM F104 | Line Call Out: | F712102A9B2E22K9L401M5 ⁽⁴⁾ | | |

SEALING CHARACTERISTICS*

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

IMMERSION PROPERTIES* - ASTM F146 Fluid Resistance after Five Hours

| | ASTM #1 Oil 300°F (150°C) | ASTM IRM #903 300°F (150°C) | ASTM Fuel A 70-85°F (20-30°C) | ASTM Fuel B 70-85°F (20-30°C) |
|--------------------------------------|--------------------------------------|--|--|--|
| Thickness Increase Range, (%) | 0-5 | 0-10 | 0-5 | 0-10 |
| Weight Increase, Max., (%) | 10 | - | 7 | 15 |
| Tensile Loss, Max., (%) | - | 35 | - | - |

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

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 Above 150 psig, contact Engineering.

⁴ 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. K9: Thermal Conductivity = 0.87W/m²K (6.0btu-in/h-ft²°F).

⁵ Testing and certification required.