

PORON® 4701-50 Firm - Data Sheet

Typical Product Properties

PROPERTY	TEST METHOD	VALUE		
PHYSICAL				
Density, kg /m ³ (lb. / ft ³)	ASTM D 3574-95, Test A	240 (15)	320 (20)	480 (30)
Tolerance, %		± 10		
Thickness, mm (inches)		4.78 – 12.70 (0.188 - 0.500)	1.57 – 3.18 (0.062 - 0.125)	0.79 – 1.14 (0.031 - 0.045)
Tolerance, %		± 10		± 20
Standard Color (Code)		Black (04)		
Compression Force Deflection Range kPa (psi) Typical kPa (psi)	0.51 cm/min (0.2" / min). Strain Rate Force Measured @ 25% Deflection	55 – 97 (8– 14) 69 (10)	90 - 159 (13-23) 117 (17)	207-415 (30-60) 269 (39)
Hardness, Durometer, Shore "O", Shore "A"	ASTM D 2240-97	18 13	24 18	55 42
Compression Set, % max.	ASTM D 3574-95 Test D @ 23°C (73°F) ASTM D 3574-95 Test D @ 70°C (158°F) ASTM D 3574-95 Test J/Test D autoclaved 5 hrs @ 121°C (250°F)	5 10 5		
Dimensional Stability, % max. change	22 hrs @ 80°C (176°F) in a forced-air oven	± 1		
Tensile Strength, Min. kPa, (psi)	ASTM D 3574-75 Test E	482 (70)	829 (120)	1382 (200)
Tensile Elongation, % min.	ASTM D 3574-75 Test E	100	100	90
Tear Strength, kN/m (pli) min Typical kN/m (pli)	ASTM D 264-91 Die C	1.1 (6) 2.1 (12)	1.8 (10) 2.8 (16)	2.3 (13) 4.2 (24)
ELECTRICAL AND THERMAL				
Dielectric Constant, K' ("DK")	ASTM D 150 measurements at 22°C (72°F) relative humidity 50% for 24 hrs.	1.63		
Dielectric Strength, kN/m (volts/mil)	ASTM D 149-97a	1969 (50)		
Dissipation Factor, tan D ("DF")	ASTM D 150-98	0.05		
Volume Resistivity, ohm-cm (ohm-in)	ASTM D 257-99	2 x 10 ¹² (7.87 x 10 ¹¹)		
Surface Resistivity, ohm/sq.	ASTM D 257-99	7 x 10 ¹²		
Thermal Conductivity, W/m-C (BTU-in./hr/ft ² -F)	ASTM C 518-98	-	0.090 (0.63)	-
Coefficient of Thermal Expansion		2.3 - 3.1 x 10 ⁻⁴ in./in./°C (1.3-1.7 x10 ⁻⁴ in/in/°F)		

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PORON® 4701-50 Firm, Continued

PROPERTY	TEST METHOD	VALUE		
TEMPERATURE RESISTANCE				
Recommended Constant Use, max.	SAE J-2236	90°C (194°F)		
Recommended Intermittent Use, max.		121°C (250°F)		
Embrittlement	ASTM D 746-98	-40°C (-40°F)		
Cold Flexibility	MIL-P-12420D 1991 @ -40°C (-40°F)	Pass		
FLAMMABILITY AND OUTGASSING				
Flammability, mm (inches)	UL 94HBF (File E20305) (Pass ≥)	4.8 (0.188)	1.6 (0.062)	-
	MVSS 302 (Pass ≥)	4.8 (0.188)	1.6 (0.062)	1.1 (0.045)
	CSA Comp HBF (File 188149) (Pass ≥)	4.8 (0.188)	1.6 (0.062)	-
Fogging	SAE J-1756 3 hrs @ 100°C (212°F)	Pass		
Outgassing, Total Mass Loss (TML) %	ASTM E 595-93 24 hrs @ 125°C (257°F) @ <7 kPa (1.02psi)	0.6	0.8	0.9
Outgassing, Collected Volatile Condensable Materials (CVCN) %		0.04	0.05	0.06
Outgassing, Water Vapor Regain (WVR) %		0.1	0.3	0.4
ENVIRONMENTAL				
Gasketing and Sealing	UL JMST2 (Consisting of UL50 & UL508) CAN/CSA – C22.2 No. 94-M91	File MH15464 File 188149		
Moisture Absorption, High Humidity Exposure, % weight gain, typical	AMS 3568-95	2		
Water Absorption, Immersion Testing, % weight gain, typical	ASTM D 570-95	13	8	5
UV Resistance	ASTM G 53-96	Good		
Ozone Resistance	GM 4486P-95	Pass		
Corrosion Resistance	AMS 3568-91	Pass		
Mildew/Bacteria Resistance	ASTM G 21	Good		
Staining	ASTM D 925	No Stain		

Notes:

- - Represents testing not available at this time.
- All metric conversions are approximate.
- Additional technical information is available.
- Typical values should not be used for specification limits.

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