

Ideal CFD Curves for Battery Pad Applications: PORON® 4701-40 Soft

PROPERTY	TEST METHOD	VALUE
PHYSICAL		
Density, kg /m ³ (lb. / ft ³)	ASTM D3574-95, Test A	240 (15)
Tolerance, %		± 10
Thickness, mm (inches)		1.4 – 3.0 (0.055 - 0.118)
Tolerance, %		± 10
Standard Color (Code)		Black (04)
Compression Force Deflection, Range kPa (psi)	0.51 cm/min (0.2"/min). Strain Rate Force Measured @ 25% Deflection	27 - 55 (4.0 - 8.0)
Typical kPa (psi)	Force Measured @ 20% Deflection Force Measured @ 25% Deflection Force Measured @ 30% Deflection Force Measured @ 40% Deflection Force Measured @ 50% Deflection Force Measured @ 60% Deflection Force Measured @ 70% Deflection	40.6 (5.9) 44.5 (6.5) 49.1 (7.1) 60.8 (8.8) 81.5 (11.8) 127 (18.5) 264 (38.4)
Hardness, Durometer, Shore O Shore A	ASTM D2240-97	12 8
Compression Set, % max.	ASTM D3574-95 Test D @ 23°C (73°F)	5
	ASTM D3574-95 Test D @ 70°C (158°F)	10
	ASTM D3574-95 Test J/Test D	5
	Autoclaved 5 hrs @ 121°C (250°F)	
Dimensional Stability, % max. change	22 hrs @ 80°C (176°F) in a Forced-Air Oven	± 1
Tensile Strength, min. kPa, (psi)	ASTM D3574-75 Test E	276 (40)
Tensile Elongation, % min.,	ASTM D3574-75 Test E	100
Tear Strength, kN/m (pli) min	ASTM D264-91 Die C	0.5 (3)
ELECTRICAL AND THERMAL		
Dielectric Constant, K' ("DK")	ASTM D150 Measurements at 22°C (72°F) Relative Humidity 50% for 24 hrs.	1.71
Dielectric Strength, kN/m (volts/mil)	ASTM D149-97a	1969 (50)
Dissipation Factor, tan D ("DF")	ASTM D150-98	0.05
Volume Resistivity, ohm-cm (ohm-in)	ASTM D257-99	1 x 10 ¹²

PROPERTY	TEST METHOD	VALUE
ELECTRICAL AND THERMAL		
Surface Resistivity, ohm/sq.	ASTM D257-99	2×10^{12}
Thermal Conductivity, W/m-C (BTU-in./hr/ft ² -F)	ASTM C518-98	-
Coefficient of Thermal Expansion		2.3 - 3.1×10^{-4} in./in./°C (1.3-1.7 x10 ⁻⁴ in/in/°F)
TEMPERATURE RESISTANCE		
Recommended Constant Use, max.	SAE J-2236	90°C (194°F)
Recommended Intermittent Use, max.		121°C (250°F)
Embrittlement	ASTM D746-98	-40°C (-40°F)
Cold Flexibility	MIL-P-12420D 1991 @ -40°C (-40°F)	Pass
FLAMMABILITY AND OUTGASSING		
Flammability, mm (inches) [Without PET Carrier]	UL 94HBF [†] (File E20305) (Pass ≥)	3.175 (0.125)
	FMVSS 302 (Pass ≥)	2.5 (0.059)
	CSA Comp HBF (File 188149) (Pass ≥)	4.8 (0.188)
Fogging	SAE J-1756 3 hrs @ 100°C (212°F)	Pass
Outgassing, Total Mass Loss (TML) %	ASTM E595-93 24 hrs @ 125°C (257°F) @ <7 kPa (1.02psi)	0.7
Outgassing, Collected Volatile Condensable Materials (CVCM) %		0.04
Outgassing, Water Vapor Regain (WVR) %		0.3
ENVIRONMENTAL		
Gasketing and Sealing	UL JMST2 (Consisting of UL50 and UL508) CAN/CSA – C22.2 No. 94-M91	File MH15464 File 188149
Water Absorption, High Humidity Exposure, % Weight Gain, Typical	AMS 3568-95	2
Water Absorption, Immersion Testing, % Weight Gain, Typical	ASTM D570-95	19
UV Resistance	ASTM G53-96	Good
Ozone Resistance	GM 4486P-95	Pass
Corrosion Resistance	AMS 3568-91	Pass
Mildew/Bacteria Resistance	ASTM G21	Good
Staining	ASTM D925	No Stain
Skin Contact Irritation	Primary Skin Irritation Test (FHSA)	Pass

**Products available as unsupported, PET supported, or tacky surface.

**Thickness availability may vary by construction type – contact your local sales or customer service representative

Notes:

†Designed to meet UL 94 HBF based upon 2022 test criteria. As of 2023 items with nominal density $\geq 15.6\text{lb/ft}^3$ (250kg/m³) are no longer eligible to be tested for UL 94 HBF but remain equivalent.

- - 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

For more information and to request a sample, please contact our team of experts at solutions@rogerscorp.com