SORBOTHANE
technical data sheet

DATA SHEET 101

Material Properties of Sorbothane®

Sorbothane®

EFFECTIVE 6/1/18

PROPERTY	DUROMETER (Shore 00) 30	50	70	UNITS	NOTES
Tensile Strength at Break	26	107	191	psi	ASTM D 412-06a
Elongation at Break	334	765	388	%	ASTM D 412-06a
Tensile Strength at 100% Strain	6	13	58	psi	ASTM D 412-06a
Tensile Strength at 200% Strain	12	24	113	psi	ASTM D 412-06a
Tensile Strength at 300% Strain	21	40	156	psi	ASTM D 412-06a
Compressive Stress at 10% Strain	0.9	2.7	11.8	psi	ASTM D 575-91, Method A
Compressive Stress at 20% Strain	2.1	6.4	30.0	psi	ASTM D 575-91, Method A
Compression Set	10	3	2	%	ASTM D 395
Tear Strength	12	28	27	lb/in	ASTM D 624-00, Die C
Bulk Modulus	4.5	5.0	4.3	gPascal	
Density	83	84	85	lb/ft^3	ASTME D 792-13
Specific Gravity	1.330	1.36	1.36		ASTME D 792-13
Optimum Performance Temperature Range	-20° to +140°	-20° to +150°	-20° to +160°	°F	Reduced strength and damping up to 200°F. Increased spring rate down to glass transition temperature.
Glass Transition	-20	-25	-17	°C	ASTM E 1640-13 by Peak Tan Delta
Flash Ignition Flammability	570°	570°	570°		
Self Ignition Flammability	750°	750°	750°		
Tested Flammability Rating with Retardant	V2	V2	V2		Underwriters Laboratory UL-94 (burns but self-extinguishing when flame removed)
Resilience Test Rebound Height	5	12	27	%	ASTM D 2632-92
Resilience Test Rebound Height	4	11	25	%	ASTM D 2632-92. Modified for the effects of material tackiness.
Dielectric Strength	213	250	252	V/ml	ASTM D 149-13, Method A
Dyanmic Young's Modulus at 5 Hertz	36, 41, 48	77, 89, 106	186, 209, 240	psi	Dyanmic Young's Modulus at 5 Hertz at 10%, 15%, 20%
Dyanmic Young's Modulus at 15 Hertz	57, 64, 75	113, 129, 154	186, 258, 295	psi	Dyanmic Young's Modulus at 15 Hertz at 10%, 15%, 20%
Dyanmic Young's Modulus at 30 Hertz	76, 86, 100	145, 165, 195	266, 299, 342	psi	Dyanmic Young's Modulus at 30 Hertz at 10%, 15%, 20%
Dyanmic Young's Modulus at 50 Hertz	95, 105, 119	175, 199, 231	298, 334, 382	psi	Dyanmic Young's Modulus at 50 Hertz at 10%, 15%, 20%
Tangent Delta at 5 Hz Excitation	0.72	0.57	0.28		
Tangent Delta at 15 Hz Excitation	0.78	0.62	0.33		
Tangent Delta at 30 Hz Excitation	0.80	0.64	0.36		
Tangent Delta at 50 Hz Excitation	0.80	0.65	0.37		
Bacterial Resistance	No Growth	No Growth	No Growth		ASTM G 21-09
Fungal Resistance	No Growth	No Growth	No Growth		ASTM G 22
Heat Aging	Stable	Stable	Stable		72 hours @ 158°F shows no change in size, appearance or durometer
Ultraviolet					Can be compounded for resistance
Acoustic Properties: Transmission Loss in Air	greater than 40	greater than 40	greater than 40	decibel/cm	At 50 Hz. Transmission loss increases with frquency

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Chemical Resistance to Distilled Water	51.6	42.1	23.8	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to City Water	50.7	41.8	23.7	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Hydraulic Fluid	-4.8	-3.9	-4.2	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Kerosene	-8.4	-4.9	-6.1	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Diesel	-4.7	-1.4	23.7	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to 50% Ethanol	98.5	58.4	51.9	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Soap Solution	100.4	59.4	33.0	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Gasoline	37.9	40.6	41.7	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Turpentine	14.5	16.3	13.4	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Motor Oil 15W40	-4.4	-3.9	-4.1	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Hexane	-5.1	-7.4	-2.8	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to IRM 903	-4.3	2.9	-3.7	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to 1N Acetic Acid	Complete Degradation	Complete Degradation	Complete Degradation	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to Ethylene Glycol	-1.1	0.2	0.4	% wt change	ASTM D 543, 7-day immersion
Chemical Resistance to 1N NaOH	11.9	10.7	7.2	% wt change	ASTM D 543, 7-day immersion