# DATA SHEET 101

## Material Properties of Sorbothane®

Sorbothane®

EFFECTIVE 1/27/15

| PROPERTY | DUROMETER (Shore 00) 30 | 50 | 70 | UNITS | NOTES |
|---|---|---|---|---|---|
| Tensile Strength at Break | 110 | 172 | 173 | psi | ASTM D 412-06a |
| Elongation at Break | 645 | 653 | 395 | % | ASTM D 412-06a |
| Tensile Strength at 100% Strain | 13 | 23 | 47 | psi | ASTM D 412-06a |
| Tensile Strength at 200% Strain | 26 | 38 | 81 | psi | ASTM D 412-06a |
| Tensile Strength at 300% Strain | 37 | 53 | 118 | psi | ASTM D 412-06a |
| Compressive Stress at 10% Strain | 1.8 | 3.7 | 10.7 | psi | ASTM D 575-91, Method A |
| Compressive Stress at 20% Strain | 4.7 | 8.9 | 23.9 | psi | ASTM D 575-91, Method A |
| Compression Set | 6 | 5 | 3 | % | ASTM D 395 |
| Tear Strength | 16 | 20 | 31 | lb/in | ASTM D 624-00, Die C |
| Bulk Modulus | 4.71 | 3.84 | 4.14 | gPascal | |
| Poisson's Ratio | 0.4066 | 0.4856 | 0.4947 | | |
| Density | 81.91 | 81.78 | 82.28 | $lb/ft^3$ | ASTME D 792-13 |
| Specific Gravity | 1.312 | 1.310 | 1.318 | | 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 | -36 | -37 | -38 | | ASTM E 1640-09 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 | 11 | 15 | 29 | % | ASTM D 2632-92 |
| Resilience Test Rebound Height | 11 | 13 | 28 | % | ASTM D 2632-92. Modified for the effects of material tackiness. |
| Dielectric Strength | 277 | 256 | 273 | V/ml | ASTM D 149-13, Method A |
| Dyanmic Young's Modulus at 5 Hertz | 44, 50, 58 | 89, 101, 118 | 180, 204, 238 | psi | Dyanmic Young's Modulus at 5 Hertz at 10%, 15%, 20% |
| Dyanmic Young's Modulus at 15 Hertz | 65, 74, 85 | 121, 135, 156 | 223, 252, 294 | psi | Dyanmic Young's Modulus at 15 Hertz at 10%, 15%, 20% |
| Dyanmic Young's Modulus at 30 Hertz | 85, 95, 110 | 147, 165, 190 | 258, 291, 338 | psi | Dyanmic Young's Modulus at 30 Hertz at 10%, 15%, 20% |
| Dyanmic Young's Modulus at 50 Hertz | 103, 116, 133 | 172, 191, 220 | 289, 325, 377 | psi | Dyanmic Young's Modulus at 50 Hertz at 10%, 15%, 20% |
| Tangent Delta at 5 Hz Excitation | 0.58 | 0.40 | 0.20 | | |
| Tangent Delta at 15 Hz Excitation | 0.64 | 0.46 | 0.28 | | |
| Tangent Delta at 30 Hz Excitation | 0.68 | 0.50 | 0.33 | | |
| Tangent Delta at 50 Hz Excitation | 0.69 | 0.52 | 0.36 | | |
| 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 | Good | Good | Good | | |
| Ozone | | | | | 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 |

continued on next page

# DATA SHEET 101

## Material Properties of Sorbothane®

EFFECTIVE 1/27/15

| PROPERTY | DUROMETER (Shore 00) 30 | 50 | 70 | UNITS | NOTES |
|---|---|---|---|---|---|
| Chemical Resistance to Distilled Water | 78.1 | 67.0 | 49.2 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to City Water | 74.6 | 65.3 | 47.8 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Hydraulic Fluid | -3.4 | -3.2 | -2.6 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Kerosene | 2.3 | 2.6 | 3.3 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Diesel | -0.9 | -0.5 | 0.5 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to 50% Ethanol | 104.0 | 94.6 | 69.0 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Soap Solution | 128.1 | 108.0 | 67.1 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Gasoline | 30.1 | 28.9 | 25.6 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Turpentine | 17.5 | 16.8 | 15.6 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Motor Oil 15W40 | -4.3 | -4.1 | -3.4 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Hexane | 3.1 | 3.7 | 4.0 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to IRM 903 | -2.9 | -3.1 | -2.1 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to 1N Acetic Acid | 40.6 | 27.2 | 14.1 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to Ethylene Glycol | 2.7 | 2.8 | 2.5 | % wt change | ASTM D 543, 7-day immersion |
| Chemical Resistance to 1N NaOH | 24.2 | 23.8 | 20.5 | % wt change | ASTM D 543, 7-day immersion |