

## OPTIX Patterned Acrylic Sheet

### Typical Properties

| Physical                          | TEST METHOD     | UNITS   | OPTIX Patterned Acrylic |
|-----------------------------------|-----------------|---------|-------------------------|
| Specific Gravity/Relative Density | ASTM D792       |         | 1.19                    |
| Optical Refractive Index          | ASTM D542       |         | 1.49                    |
| Sound Transmission                | ASTM E90 / E413 | dB      | 27                      |
| Water Absorption                  | ASTM D570       | %       | 0.4                     |
| Mold Shrinkage                    | ASTM D955       | mils/in | 2-6                     |

| Mechanical  | TEST METHOD | UNITS                 | OPTIX Patterned Acrylic |
|---|-------------|-----------------------|-------------------------|
| Tensile Strength                                  | ASTM D638   | psi                   | 11,030                  |
| Tensile Elongation – Max.                         | ASTM D638   | %                     | 5.8                     |
| Tensile Modulus of Elasticity                     | ASTM D638   | psi                   | 490,000                 |
| Flexural Strength                                 | ASTM D790   | psi                   | 17,000                  |
| Flexural Modulus of Elasticity                    | ASTM D790   | psi                   | 490,000                 |
| Izod Impact Strength – Molded Notch               | ASTM D256   | ft-lb/in Notch        | 0.4                     |
| Izod Impact Strength – Milled Notch               | ASTM D256   | ft-lb/in Notch        | 0.28                    |
| Tensile Impact Strength                           | ASTM D1822  | ft-lb/in <sup>2</sup> | 20                      |
| Abrasion Resistance - Change in Haze - 0 cycles   | ASTM D1044  | Haze, %               | 0                       |
| Abrasion Resistance - Change in Haze - 10 cycles  | ASTM D1044  | Haze, %               | 11.2                    |
| Abrasion Resistance - Change in Haze - 50 cycles  | ASTM D1044  | Haze, %               | 24                      |
| Abrasion Resistance - Change in Haze - 200 cycles | ASTM D1044  | Haze, %               | 24.9                    |
| Rockwell Hardness                                 | ASTM D785   |                       | M-95                    |

| Thermal  | TEST METHOD | UNITS                         | OPTIX Patterned Acrylic |
|--|-------------|-------------------------------|-------------------------|
| Maximum Recommended Continuous Service Temperature |             | °F                            | 170-190                 |
| Softening Temperature                              |             | °F                            | 210-220                 |
| Melting Temperature                                |             | °F                            | 300-315                 |
| Deflection Temperature @ 264 psi (1.8 MPa)         | ASTM D648   | °F                            | 203                     |
| Deflection Temperature @ 66 psi (0.45 MPa)         | ASTM D648   | °F                            | 207                     |
| Coefficient of Thermal Expansion                   | ASTM D696   | in/in/°F                      | 3.0x10 <sup>-5</sup>    |
| Thermal Conductivity                               | ASTM C177   | BTU-ft/ft <sup>2</sup> /hr/°F | 0.075                   |
| Flammability (Burning Rate)                        | ASTM D635   | in/minute                     | 1.019                   |
| Flammability                                       | UL 94       |                               | HB                      |
| Smoke Density Rating                               | ASTM D2843  | %                             | 3.4                     |
| Self-Ignition Temperature                          | ASTM D1929  | °F                            | 833                     |
| Flame Spread Index                                 | ASTM E84    |                               | 115                     |
| Smoke Developed Index                              | ASTM E84    |                               | 550                     |

| Chemical   | TEST METHOD                    | UNITS | OPTIX Patterned Acrylic |
|--|--------------------------------|-------|-------------------------|
| Resistance to Stress - Critical Crazing Stress to: Isopropyl Alcohol | ARTC Modification of MIL-P6997 | psi   | 900                     |
| Resistance to Stress - Critical Crazing Stress to: Lacquer Thinner   | ARTC Modification of MIL-P6997 | psi   | 500                     |
| Resistance to Stress - Critical Crazing Stress to: Toluene           | ARTC Modification of MIL-P6997 | psi   | 1,300                   |
| Resistance to Stress - Critical Crazing Stress to: Solvesso 100      | ARTC Modification of MIL-P6997 | psi   | 1,600                   |

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determine the suitability of our materials and suggestions before adopting them on a commercial scale.

Questions? Please contact Plaskolite Customer Support 800-848-9124