

LEXAN^{*} HPXXW Film

Product Datasheet

DESCRIPTION

LEXAN^{*} HPXXW graphic film is a high-performance coated film offering very good chemical/abrasion resistance, plus very good UV resistance. These performance capabilities, along with LEXAN film's ease of processing, make HPXXW film a good choice for outdoor graphic applications such as: Warning Labels, Outdoor Menu Boards, Gasoline Pumps, Outdoor Lenses, Marine Graphics.

Typical Property Values¹

| Property | ASTM (ISO) Test Method | Units USCS (SI) | HP12W | HP92W |
|---|-------------------------|---|------------|------------|
| Mechanical | | | | |
| Tensile Strength | | | | |
| @ Yield | ASTM D882 (ISO 527) | psi (MPa) | 8800 (60) | 8800 (60) |
| Ultimate | ASTM D882 (ISO 527) | psi (MPa) | 9000 (62) | 9000 (62) |
| Tear Strength | | | | |
| Initiation | ASTM D1004 | lb/mil (kN/m) | 1.51 (264) | 1.51 (264) |
| Propogation | ASTM D1922 | g/mil (kN/m) | 38.7 (40) | 38.7 (40) |
| Thermal | | | | |
| Vicat Softening Temperature, B | ASTM 1525 | °F (°C) | 320 (160) | 320 (160) |
| Heat Deflection Temp. by TMA at 1.8 MPa | ISO 75 Modified | °F (°C) | 290 (143) | 290 (143) |
| Shrinkage at 302 °F (150 °C) | ASTM D1204 | % | 1.40% | 1.40% |
| Physical | | | | |
| Density | ASTM D792 (ISO 1183) | slug/ft ³ (kg/m ³) | 75 (1200) | 75 (1200) |
| Surface Energy (1st surface / 2nd surface) | ASTM D5946-01 | - | NA/34 | NA/34 |
| Surface Tension (1st surface / 2nd surface) | Dyne Pens | Dyne | NA/38-40 | NA/38-40 |
| Pencil Hardness (1st surface / 2nd surface) | ASTM D3363 | - | hb-f/b-hb | f-h/b-hb |
| Taber Abrasion | ASTM D1044 | delta Haze | <1 | <2 |
| Optical | | | | |
| Refractive Index @ 77 °F (25 °C) | ASTM D542A | N _b | 1.5 | 1.5 |
| Light Transmission | ASTM D1003 | % | 90 | 92 |
| Yellowness Index | ASTM D1925 | % | 1.3 | 0.7 |
| Haze | ASTM D1003 | % | 56 | 0.5 |
| Gloss over Flat Black min/max @ 60° | ASTM D523-60 (ISO 2813) | - | 12 | 92 |
| UV % Transmission at 380 nm | UV/Visual Spectroscopy | % | 14 | 39 |

Manufacturing Specifications

HP12W

| Nominal Gauge Ranges | Min./Max Limit of Nominal |
|----------------------|---------------------------|
| 0.007" (0.175 mm) | -10% / +24% |
| 0.010" (0.250 mm) | -5% / +20% |
| 0.015" (0.375 mm) | -5% / +9% |
| 0.020" (0.500 mm) | -3% / +10% |
| 0.025" (0.625 mm) | -3% / +6% |

HP92W

| Nominal Gauge Ranges | Min./Max Limit of Nominal |
|----------------------|---------------------------|
| 0.007" (0.175 mm) | -10% / +24% |
| 0.010" (0.250 mm) | -10% / +20% |
| 0.015" (0.375 mm) | -5% / +12% |
| 0.020" (0.500 mm) | -5% / +10% |



¹ These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local GE Advanced Materials, Specialty Film & Sheet representative or the GE Advanced Materials, Specialty Film & Sheet Quality Services Department.

Reported values are based on 0.010" (0.250 mm) thickness unless otherwise noted.

* LEXAN is a trademark of General Electric Company.

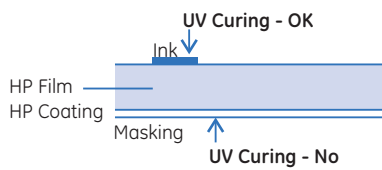
GE Advanced Materials Specialty Film & Sheet

UV RESISTANCE

LEXAN HPXXW film utilizes a proprietary coating technology developed by GE Plastics. This special coating resists yellowing and hazing - no matter how bright the sun. With a yellowness index of less than 3.0 at 1000 hours of QUV testing and less than 2.0 at 1000 hours of Xenon Arc testing. LEXAN HPXXW film is a natural choice for demanding outdoor applications.

MASKING

The standard masking on HP film is not designed to have UV radiation (for curing) passed through it. If this is required, alternate masking is available. Please contact your sales representative for more details.



CHEMICAL AND ABRASION RESISTANCE

Along with very good UV resistance, LEXAN HPXXW film also has chemical and abrasion resistance comparable with the original HPS series of films.

Taber Abrasion Resistance (ASTM D1044) LEXAN HPXXW Grapic Film

| Condition | Units | HP12W | HP92W |
|--------------------------|------------------|-------|-------|
| CS10F Wheel 500 grams | | | |
| 25 | Change in % Haze | 0.4 | 2 |
| 50 | Change in % Haze | 0.6 | 2.9 |
| 100 | Change in % Haze | 2 | 6.6 |
| 200 | Change in % Haze | 6.7 | 13.8 |

1 As manufactured. Results do not change after film post-cured.

** Failure constitutes any of the following: non-removable stain or cloudiness, blistering, delamination, or cracking of the coating or failure to pass crosshatch tape adhesion.

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- * Formula 409 and Clorox are registered trademarks of the Clorox Company
- * Top Job, Downy, and Mr. Clean are registered trademarks of Procter & Gamble
- * Fantastik and Spray 'N Wash are registered trademarks of Texize, Division of Norton Norwich Products, Inc.
- * Windex w/Ammonia D is a registered trademark of Drackett Products Company

CHEMICAL RESISTANCE

| Chemical | Results ¹ |
|---|---|
| One Hour Continuous Surface Contact at 73 °F | |
| Acetone | Failed** |
| MEK | Failed @ < 50 minutes** (HP92W) Passed (HP12W) |
| Toluene | Passed |
| Methylene Chloride | Failed** |
| Isopropyl Alcohol | Passed |
| Cyclohexanone | Passed |
| Ethyl Acetate | Passed |
| Xylene | Passed |
| 40% NaOH | Passed |
| Concentrated HCl | Passed |
| Gasoline (Regular) | Passed |
| Gasoline (Unleaded) | Passed |
| Butyl Cellosolve | Passed |
| 24 Hour Surface Exposure at 120 °F | |
| Coffee | Passed |
| Top Job* | Passed |
| Fantastik* | Passed |
| Formula 409* | Passed |
| Windex w/Ammonia D* | Passed |
| Wisk* | Passed |
| Downy* | Passed |
| Spray N Wash* | Passed |
| Clorox* | Passed |
| Mustard | Passed |
| Mr. Clean* | Passed |
| Ketchup | Passed |
| Tea | Passed |
| Tomato Juice | Passed |
| Lemon Juice | Passed |
| Grape Juice | Passed |
| Vinegar | Passed |
| Milk | Passed |



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