Anti-fog, Abrasion Resistance

# Visgard® Premium LTF-300
# Advanced Permanent Anti-fog Coated Polyester Film

## Target of Development

| | |
|---|---|
| Item | Permanent Anti-fog Adhesive backed PET film for Automotive Interiors |
| Effect | ① Improved visibility for driver and passengers ②Improved shatter resistance of windows |
| Purpose | ① Excellent hydrophillic permanent anti-fog performance ②Excellent optical clarity ③Good abrasion resistance ④ Enhanced condensation control |

## Features

**Visgard LTF-300 is a washable, scratch-resistant, permanent anti-fog film for automotive interiors.**




| Safety | Performance | Other |
|---|---|---|
| • Optically clear, enabling safer driver and navigation<br>• Eliminating steam on windows during hot and humid summer temperatures and frost and fog during cold winter months to enhance visibility<br>• PET film acts as a net to trap and contain shattered glass fragments | • Anti-fog : passes EN166N<br>• Abrasion resistance: 2H pencil hardness, steel wool resistance ,passes EN166K (falling sand)<br>• UV resistance: passes EN166UV<br>• Chemical Resistance: acetone, ammonium hydroxide, diacetone alcohol, ethanol, ethyl acetate, gasoline, glycol ethers/esters, hexane, isopropanol, methanol, MEK, toluene | • Application process same as applying window tint film to an automobile<br>• Can be applied to Glass, Polycarbonate, Acrylic and other Plastic Surfaces<br>• Durable after repeated cleaning with household cleaning agents and soft touch cloth.<br>• Printable surface |

| Adhesive Bond Strength | |
|---|---|
| Polyken Probe Tack (0.5 sec dwell, 0.5cm/sec) | 650 grams |
| Peel Adhesion(PSTC-101):15 min dwell<br>24 hr dwell | 2.7 lbs./in<br>3.8 lbs./in |
| Shear Adhesion(PSTC-107): 1/2in X 1/2in X 500g | 40+ hours |

| Anti-scratch | ΔHaze | |
|---|---|---|
| | 100Cycles | 500Cycles |
| Uncoated | 20%(approx.) | 66%(approx.) |
| Visgard LTF-300 | 5.6% | 25.5% |

Taber Test (Polyester substrate, CS10F wheel and 500g load, ASTM D1044)

| Physical Characteristics | |
|---|---|
| Appearance | Crystal clear and colorless. The removable masking also clear and msut be removed. |
| Visible Light Transmission | 90% |
| Heat Tolerance | 300°F (148.8°C) |
| Minimum Application Temperature | 30°F(-1°C) |

| Anti-scratch | ΔHaze |
|---|---|
| Uncoated | 30%(approx.) |
| Visgard LTF-300 | 1.49% |

Falling Sand Test (ASTM D968, 3kg standard Ottawa sand)



## Issue & Solution

Issue : Film durability for specific automotive application
Solution : To conduct durability study by applying film on the intended use over a period of time for evaluation

## Application

Automotive Windows (interior), Automotive Car Gauges, Automotive Heads Up Display

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